DINOSAURS!

•DISCOVER THE GIANTS OF THE PREHISTORIC WORLD•

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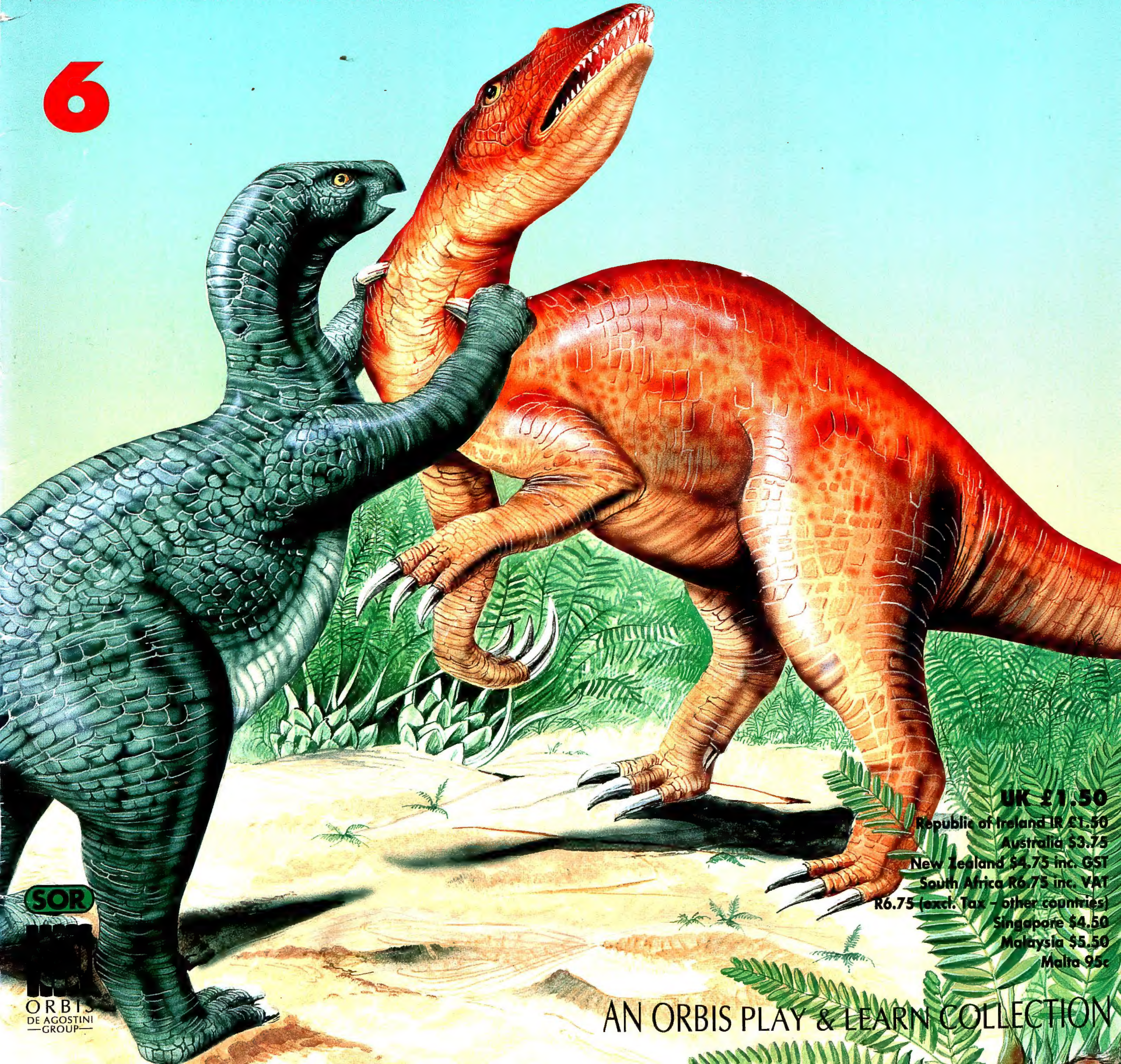

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DINOSAURS!

• DISCOVER THE GIANTS OF THE PREHISTORIC WORLD •

IDENTIKIT

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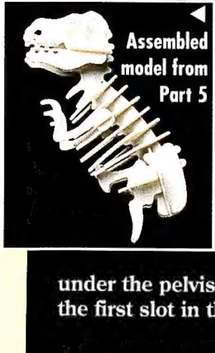
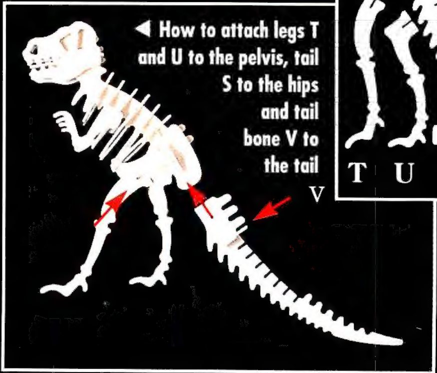
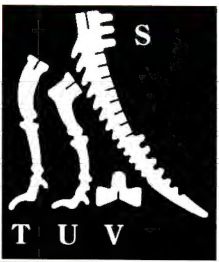
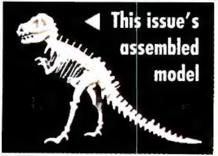

◄ Assembled model from Part 5

Attach tail S, curved side down, to the open slot in the hips. Push the tail firmly home, until it is held rigid. Clip leg T (the dinosaur's left leg) into the left slot under the pelvis. Clip leg U (the dinosaur's right leg) into the right slot under the pelvis. Insert tail bone V into the first slot in the tail.


◄ How to attach legs T and U to the pelvis, tail S to the hips and tail bone V to the tail



◄ This issue's model parts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IGUANODON

One of the first dinosaurs to be found, *Iguanodon* had strong back legs with three-toed feet and hoof-like nails.

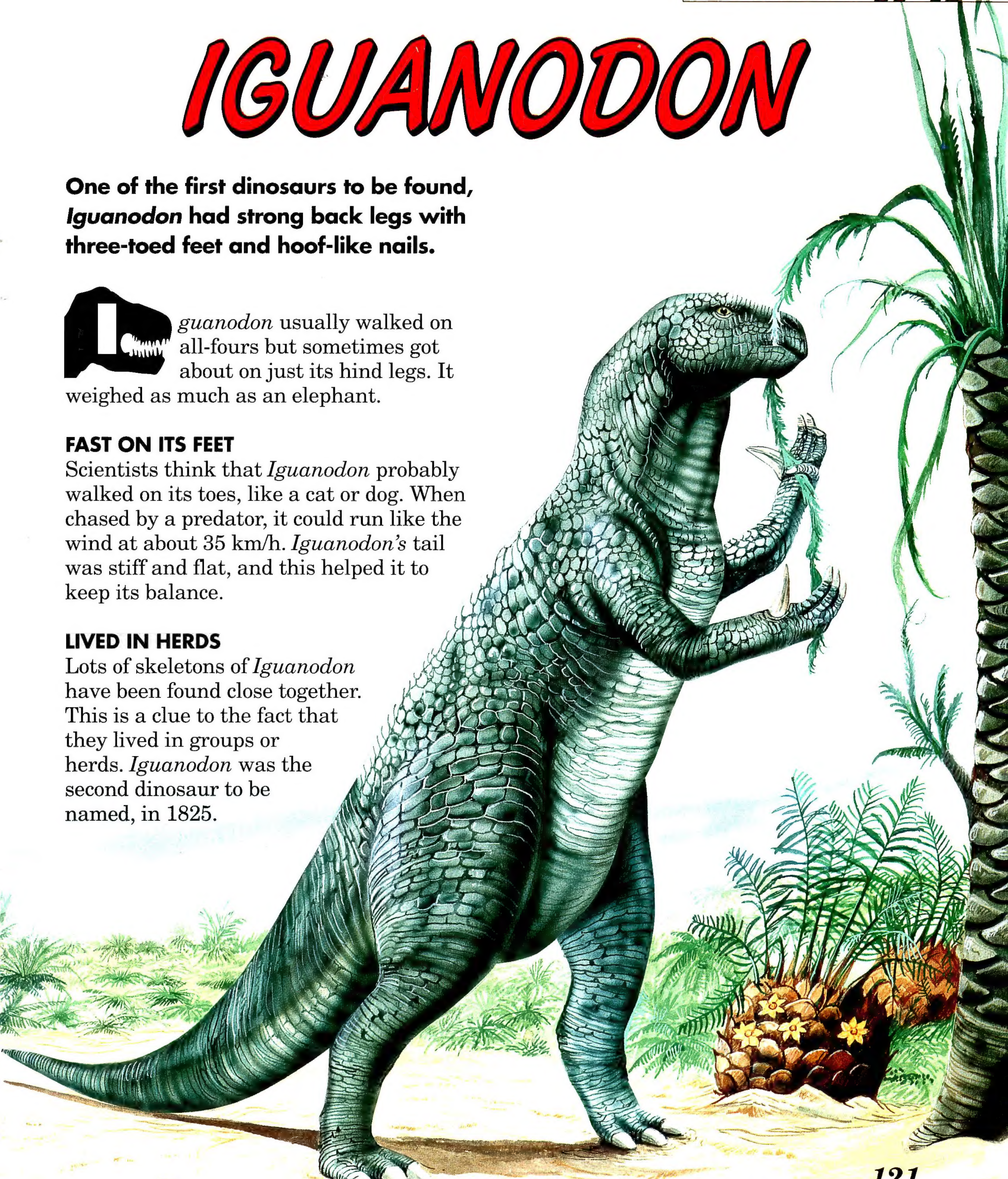
Iguanodon usually walked on all-fours but sometimes got about on just its hind legs. It weighed as much as an elephant.

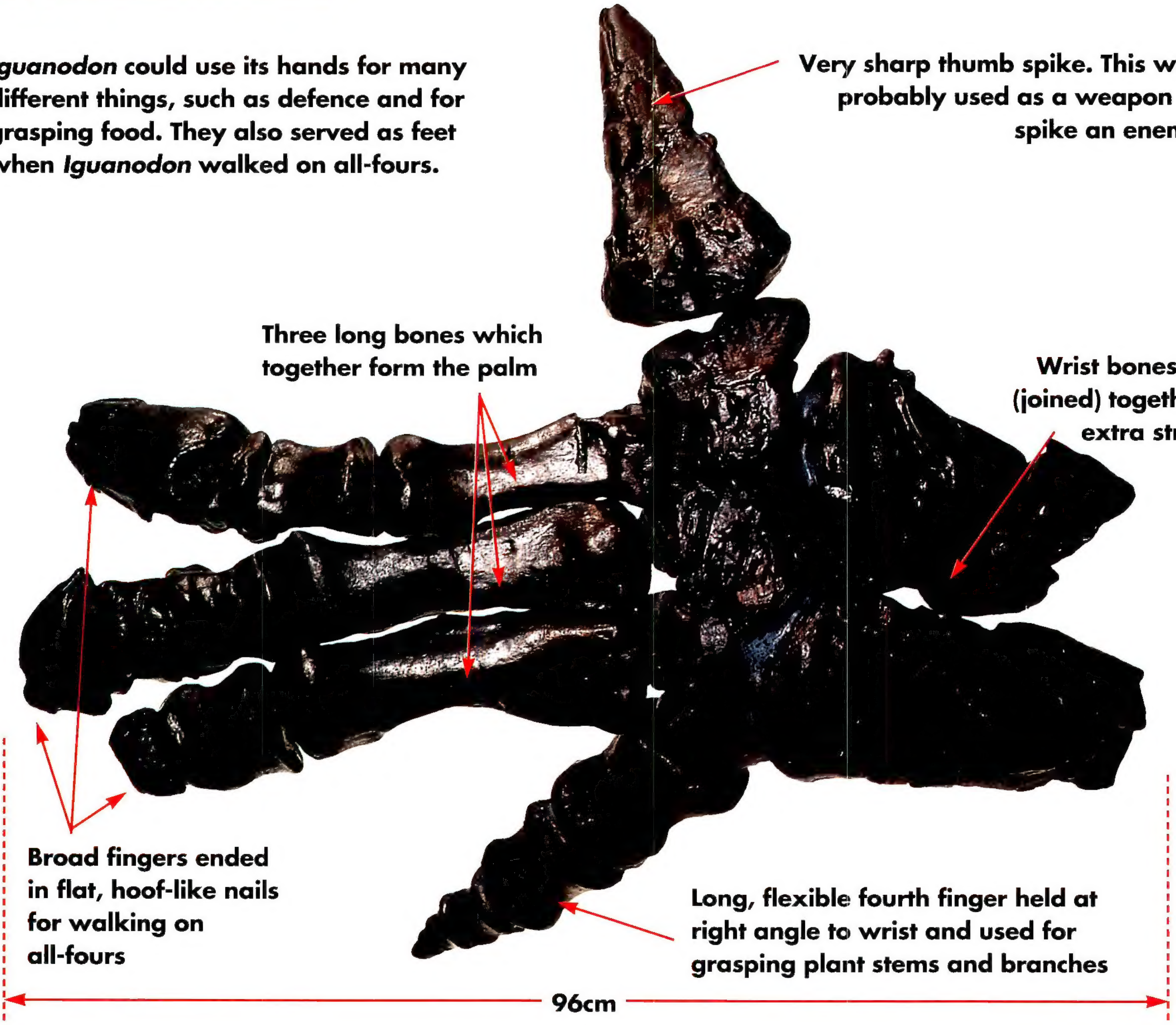
FAST ON ITS FEET

Scientists think that *Iguanodon* probably walked on its toes, like a cat or dog. When chased by a predator, it could run like the wind at about 35 km/h. *Iguanodon's* tail was stiff and flat, and this helped it to keep its balance.

LIVED IN HERDS

Lots of skeletons of *Iguanodon* have been found close together. This is a clue to the fact that they lived in groups or herds. *Iguanodon* was the second dinosaur to be named, in 1825.





***Iguanodon* could use its hands for many different things, such as defence and for grasping food. They also served as feet when *Iguanodon* walked on all-fours.**

Very sharp thumb spike. This was probably used as a weapon to spike an enemy

Three long bones which together form the palm

Wrist bones fused (joined) together for extra strength

Broad fingers ended in flat, hoof-like nails for walking on all-fours

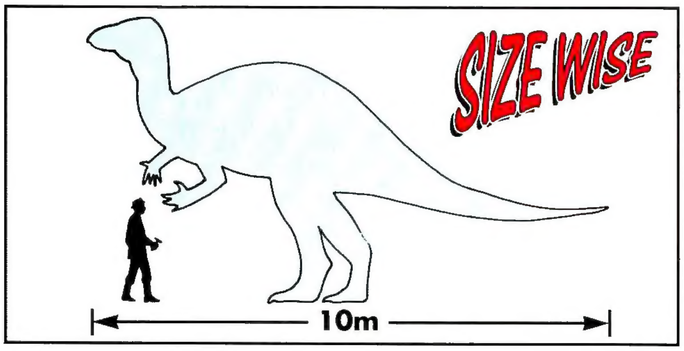
Long, flexible fourth finger held at right angle to wrist and used for grasping plant stems and branches

96cm

19 CM THE LENGTH OF IGUANODON'S THUMB SPIKE

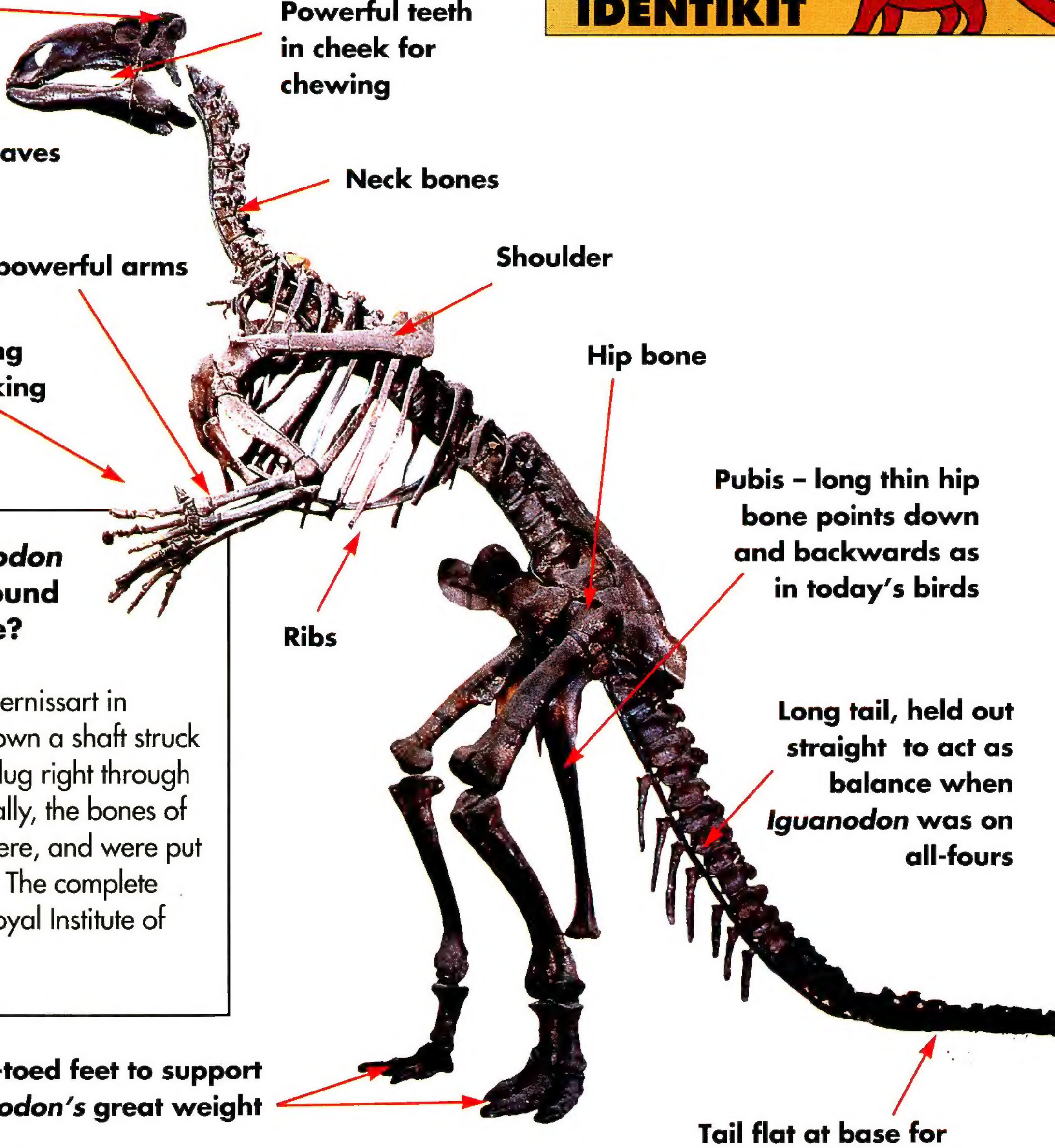
SPIKED THUMB

Iguanodon had very strange hands. These had four fingers and a pointed thumb that was like a spike. *Iguanodon* could only move the spike from side to side and used it as a weapon to defend itself. *Iguanodon* was a plant-eater and used its fourth finger to hook down branches for food.



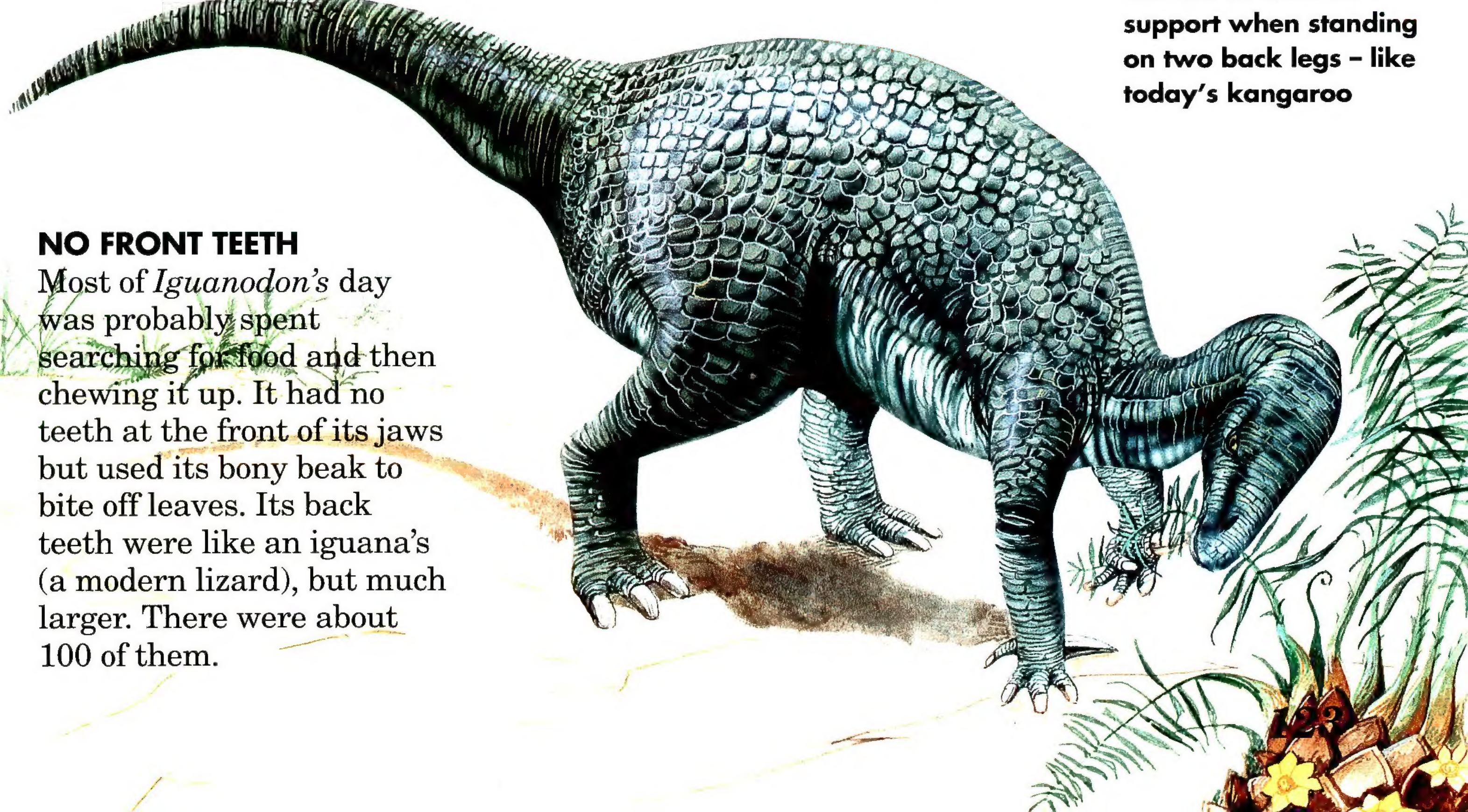
MONSTER FACTS

- **NAME:** *Iguanodon* (ig-wa-no-don) means 'iguana tooth'
- **SIZE:** up to 10m long and 5m high
- **FOOD:** plants and leaves
- **LIVED:** about 120 – 110 million years ago in the Early Cretaceous Period in Europe, Mongolia, North Africa and North America


Skull similar to today's horse
Powerful teeth in cheek for chewing
Bony beak for nipping off leaves
Neck bones
Short, powerful arms
Shoulder
Very strong hands for supporting *Iguanodon's* weight when walking on all-fours
Hip bone
Pubis – long thin hip bone points down and backwards as in today's birds
Ribs
Long tail, held out straight to act as balance when *Iguanodon* was on all-fours
Very sturdy three-toed feet to support *Iguanodon's* great weight
Tail flat at base for support when standing on two back legs – like today's kangaroo

Is it true that *Iguanodon* bones were found down a coal mine?

In 1878, in the small town of Bernissart in Belgium, miners working 322m down a shaft struck a mass of fossil bones. They had dug right through the skeleton of an *Iguanodon*. Finally, the bones of 39 *Iguanodon* were discovered there, and were put together like giant jigsaw puzzles. The complete skeletons can still be seen in the Royal Institute of Natural Sciences in Belgium.



NO FRONT TEETH

Most of *Iguanodon's* day was probably spent searching for food and then chewing it up. It had no teeth at the front of its jaws but used its bony beak to bite off leaves. Its back teeth were like an iguana's (a modern lizard), but much larger. There were about 100 of them.

BAROSAURUS

***Barosaurus* had a very long neck and often fed on leaves on the top of trees, just as giraffes do today.**

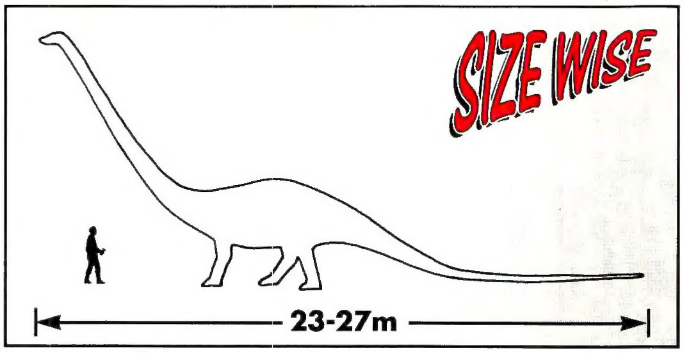
Huge and long-necked, *Barosaurus* also had a lengthy tail which it wielded as a weapon against enemies. It lived in herds, which was also useful for defence against predators. Like all members of the sauropod family, it had one large, curved claw on the inner toe of its front foot.

HOLLOW NECK BONES

The bones in *Barosaurus'* long neck were hollow and light, which meant it could lift its head to feed quite easily. If its neck bones had been solid, it would have been too heavy to lift.

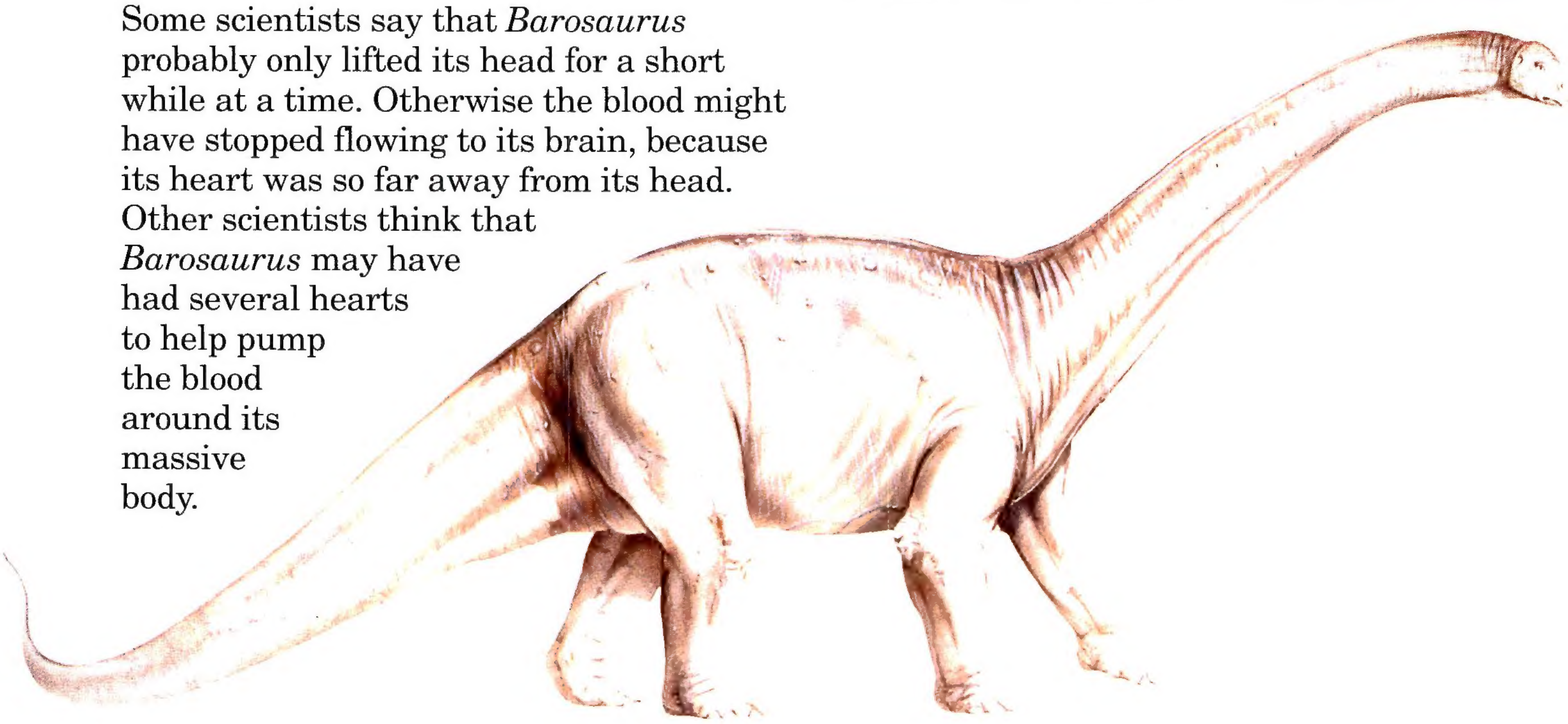
BRAIN DRAIN

Some scientists say that *Barosaurus* probably only lifted its head for a short while at a time. Otherwise the blood might have stopped flowing to its brain, because its heart was so far away from its head. Other scientists think that *Barosaurus* may have had several hearts to help pump the blood around its massive body.



MONSTER FACTS

- **NAME:** *Barosaurus* (bar-oh-saw-rus) means 'heavy reptile'
- **SIZE:** up to 27m long
- **FOOD:** plants and leaves
- **LIVED:** about 150 – 140 million years ago in the Jurassic Period in western North America and Tanzania, East Africa



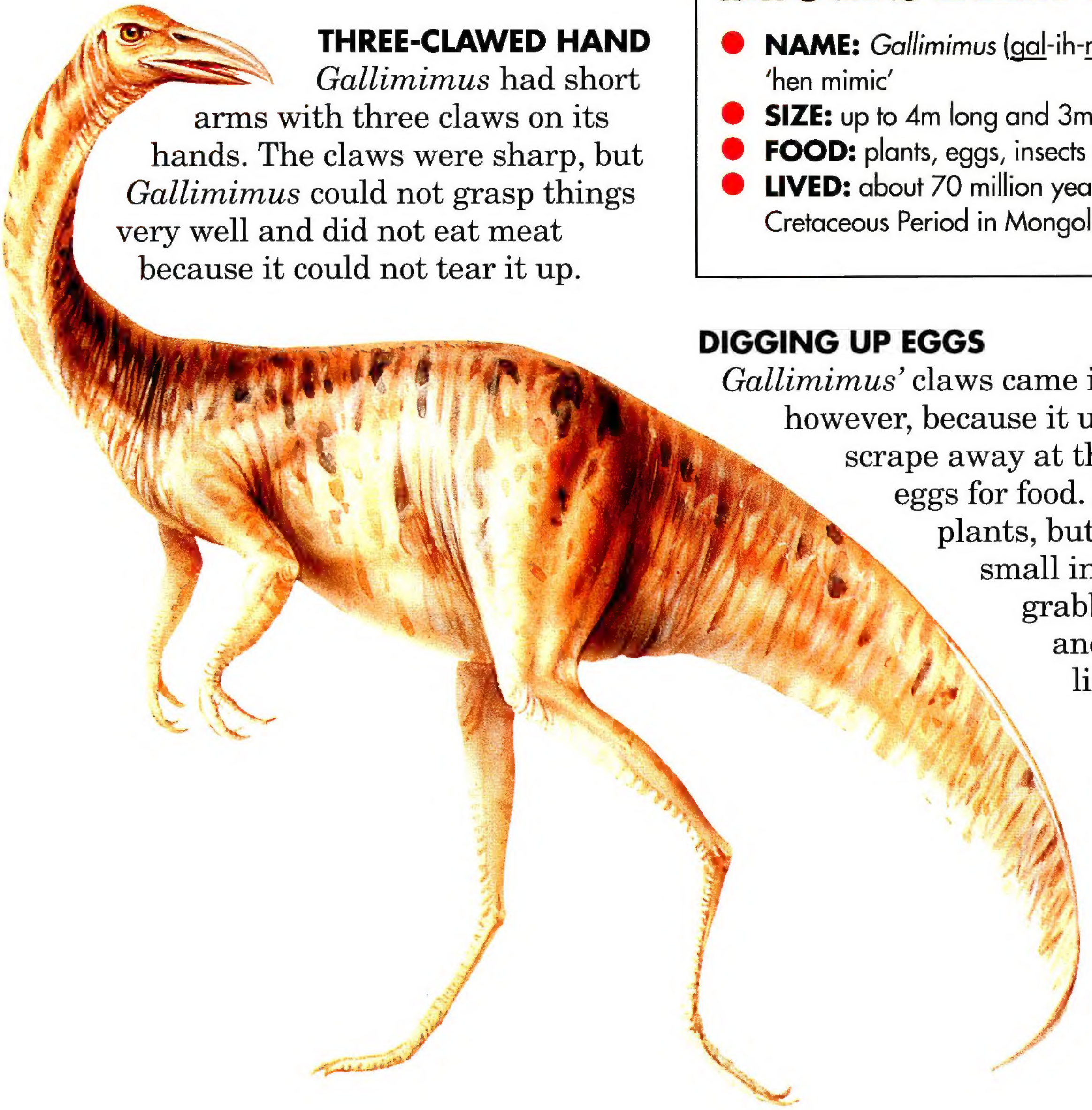
GALLIMIMUS

***Gallimimus* was built for speed. It could run fast enough to break the speed limit in most of today's cities.**

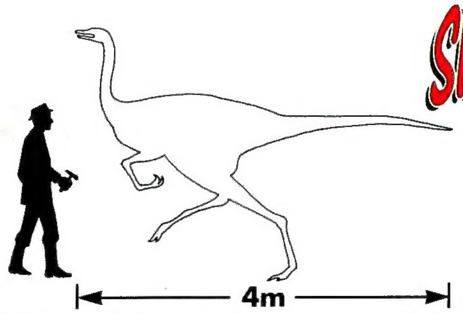
With a short, light body and long back legs, *Gallimimus* was a fast-running dinosaur. It took very long strides and could outrun most predators. It looked like a large ostrich with its long neck and toothless beak, but it had no feathers and no wings. Its stiff tail helped it to balance when running.

THREE-CLAWED HAND

Gallimimus had short arms with three claws on its hands. The claws were sharp, but *Gallimimus* could not grasp things very well and did not eat meat because it could not tear it up.



SIZE WISE



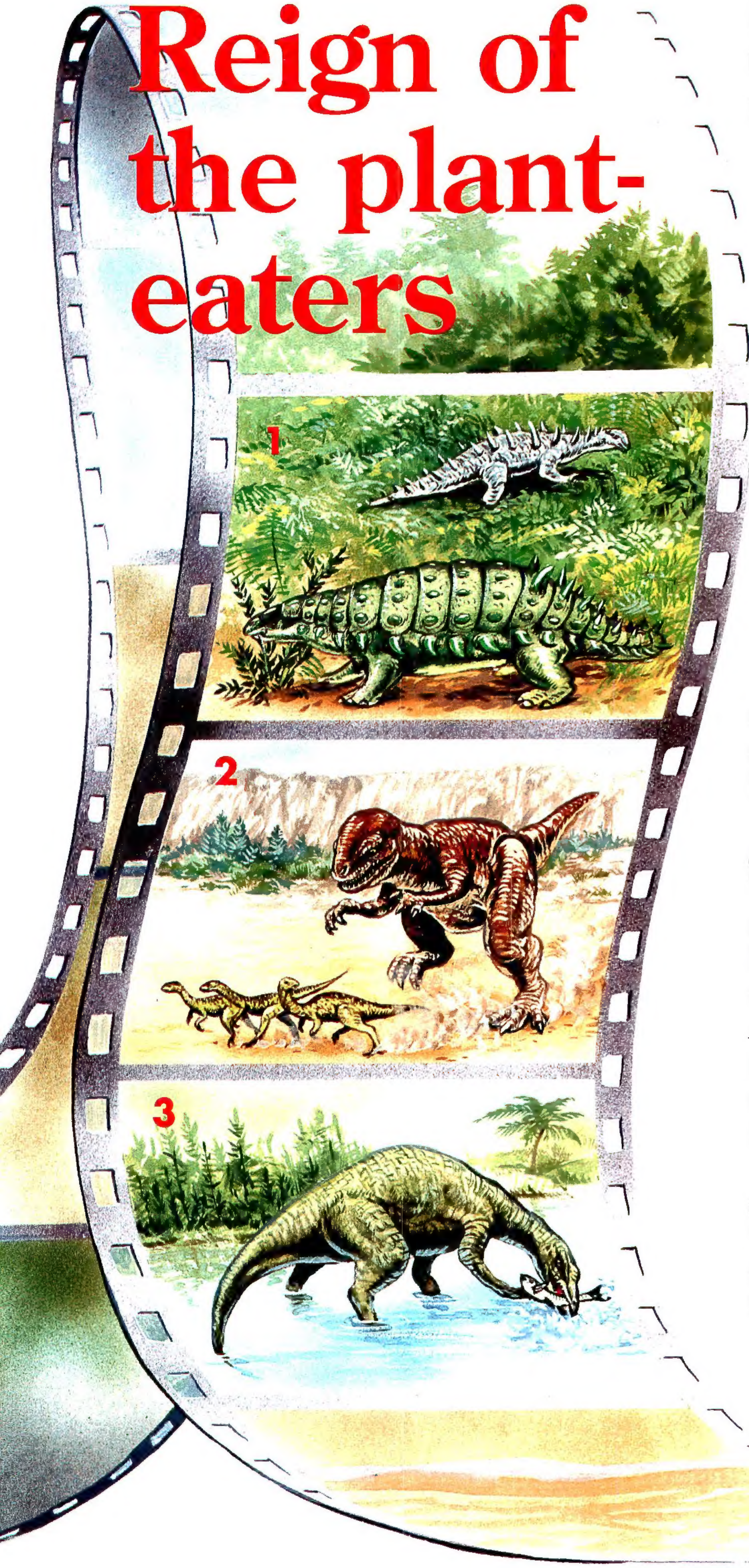
MONSTER FACTS

- **NAME:** *Gallimimus* (gal-ih-mime-us) means 'hen mimic'
- **SIZE:** up to 4m long and 3m high
- **FOOD:** plants, eggs, insects and lizards
- **LIVED:** about 70 million years ago in the Cretaceous Period in Mongolia

DIGGING UP EGGS

Gallimimus' claws came in very useful, however, because it used them to scrape away at the soil to dig up eggs for food. It ate mostly plants, but it also fed on small insects, which it grabbed in its beak, and even chased lizards.

Reign of the plant-eaters



Plant-eaters became the most important dinosaurs 140 – 100 million years ago. Some were small and speedy. Others were large and slow.

More kinds of dinosaurs lived during the Early Cretaceous than at any other time. Most were plant-eaters but there were also some vicious meat-eaters.

1 SPIKES AND PLATES

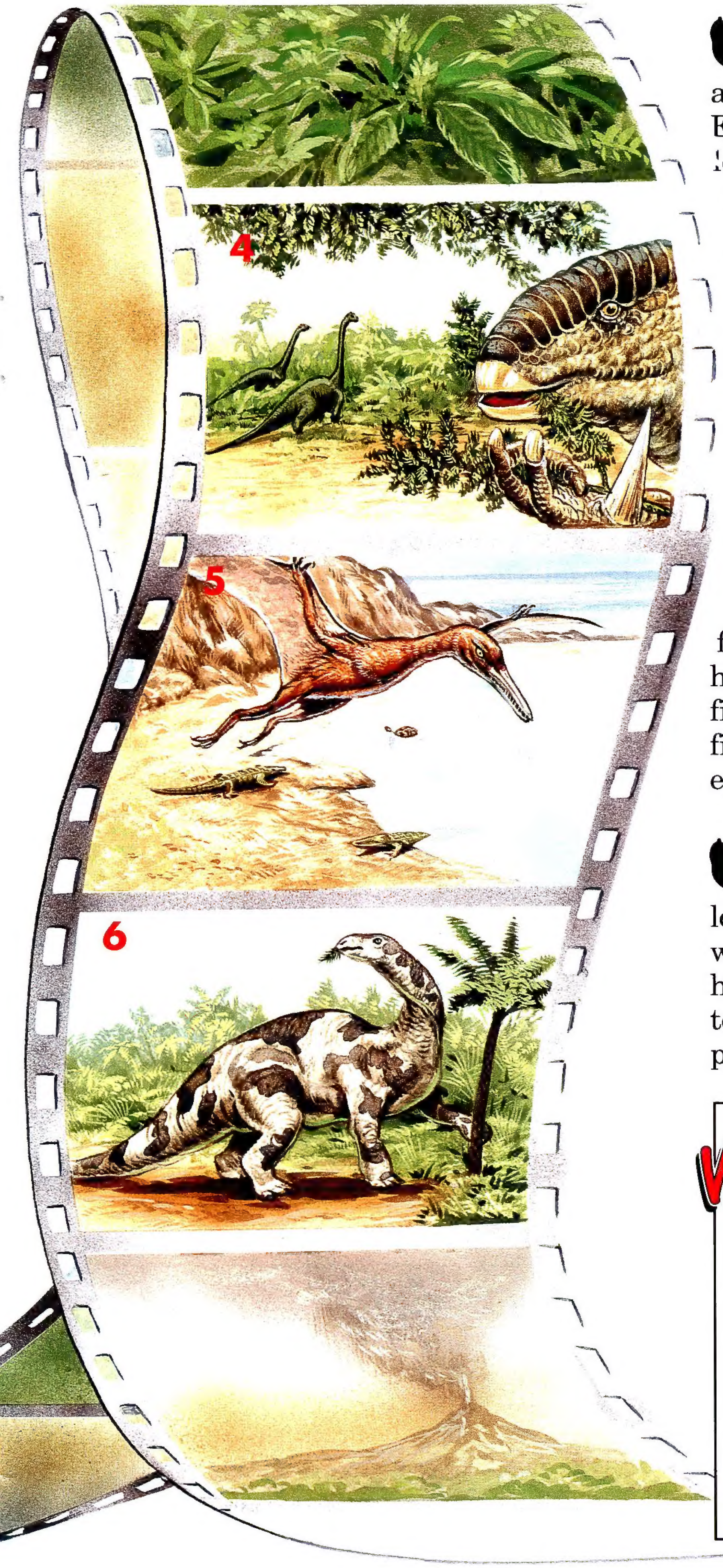
Some of the plant-eaters of this period were armoured for defence. *Polacanthus*, seen in the background, was protected by sharp spines and bony plates on its back. *Hylaeosaurus*, pictured in the foreground, measured about 6m long – the length of an African elephant. It also had plated armour with spines. These stuck out along the lower back and tail.

2 RUSHING AFTER PREY

Megalosaurus – a fierce meat-eater – chases a group of *Hypsilophodon*. But it has to be quick as these smaller dinosaurs can run as fast as a car moves in a city. *Hypsilophodon* were 2.3m-long plant-eaters that lived in Europe. As they ran along at speed, they used their long, stiff tails to keep their balance.

3 STRANGE FISH-EATER

Baryonyx used its 30cm-long curved claws, which were as big as carving knives, to catch fish. *Baryonyx* means ‘heavy claw’. Here, it has just caught a fish by hooking its huge claw through its body. *Baryonyx* also had an unusual crocodile-like head.



4 ENORMOUS PLANT-EATERS

Mighty *Iguanodon*, seen here chewing a branch, was common in Early Cretaceous Europe. It measured 10m in length – longer than a double-decker bus – and stood 5m high. *Iguanodon's* fingers were very useful. Its fourth finger could be bent to grab hold of branches and its spiked thumb was a fearsome weapon for stabbing. In the distance, *Pelorosaurus* feed on tall trees. These great dinosaurs became less common during the Early Cretaceous Period.

5 BRAZILIAN PTEROSAUR

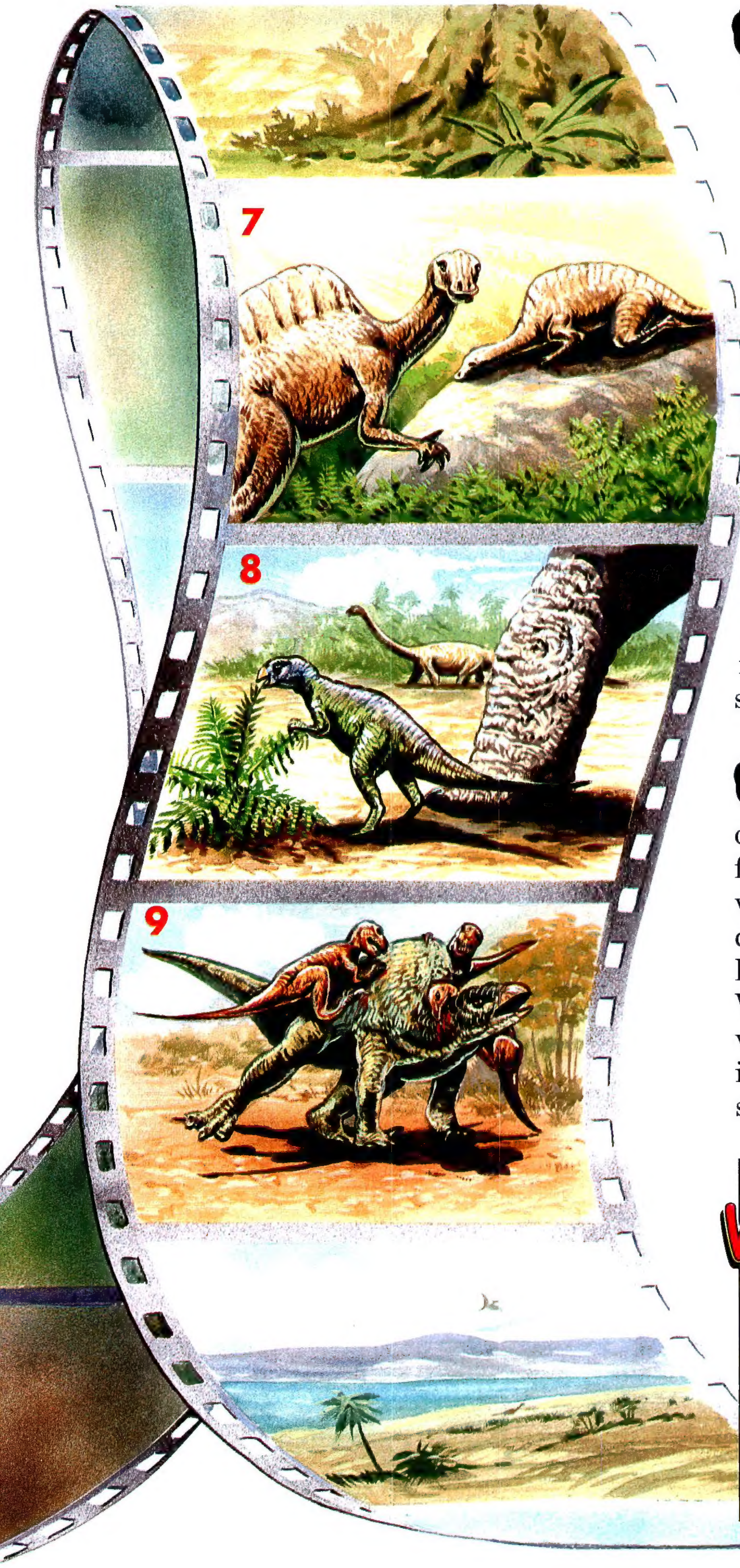
The huge wings of flying reptile *Cearadactylus* darkened Early Cretaceous skies. They measured 4m from tip to tip – about the width of a hang-glider. The pterosaur had long jaws filled with teeth, and it hunted the seas for fish. Far below the pterosaur lurk some early crocodiles.

6 BIG-TAILED DINOSAUR

Tenontosaurus, seen here munching on leaves, was a heavy plant-eater that weighed up to a tonne. It was 4.5m long. It had a huge and powerful tail, which it used to protect itself from attacks by fierce predators, such as *Deinonychus*.

What is? A PTEROSAUR

Pterosaurs – it means 'winged lizard' – were very light, flying reptiles, not dinosaurs. Their wings were made of skin stretched tightly between their extremely long fourth finger bones and their tails. Pterosaur fossils show that some of these flying reptiles were the size of sparrows, while others had wing-spans of about 10m – the same size as that of a small aeroplane. There were many sizes of pterosaur in between.



7 WARMING UP

The sun is up, and two *Ouranosaurus* are ready to start a new day. *Ouranosaurus* had a remarkable 'sail' on its back. This was made of skin stretched over long spines growing from the backbone. The skin of the sail was filled with blood vessels. These helped the dinosaur to take up heat from the sun. Once *Ouranosaurus* had warmed up, it could move more quickly.

8 PARROT BEAK

Psittacosaurus stands up on its back legs to nibble at leaves. This dinosaur had a parrot-like beak, which it used to bite tough vegetation. *Psittacosaurus* was a smallish dinosaur, measuring about 2m long. Sauropods – such as *Euhelopus* – towered over it.

9 SAVAGE ATTACK

Three hungry *Deinonychus* leap on top of an *Iguanodon*. *Deinonychus* was a very fierce meat-eater that hunted in packs, like wolves. Its main weapon was the huge claw on each foot. This claw was shaped like a new moon and measured 31cm long. When several *Deinonychus* attacked their victim, some slowed it down by clinging to its tail or back. Others used their claws to slash open its belly or to rip its flesh.

What is? A PREDATOR

A predator is an animal that hunts and kills other animals for food. Predators of the Early Cretaceous Period included *Megalosaurus*, *Baryonyx*, and *Deinonychus*. They were, of course, all meat-eating dinosaurs. Predators of today include the big cats such as lions and tigers, sharks, dragonflies and spiders.

10 TOOTHLESS PTERANODON

As it swoops over the sea, a *Pteranodon* catches a fish in its long, toothless beak. The *Pteranodon* was one of the largest of the pterosaurs (flying reptiles). It had a wing span of more than 5m – as long as a two small cars. At the back of its head was a long, bony crest. *Pteranodon* might have used this as a rudder to guide and balance it while it flew.

11 SMALL TANK

Silvisaurus, seen here peacefully eating plants in a lush forest, was built like a tank. Its 2.5m-long body was protected with flat, shield-like pieces of bone plates. Sharp spines also stuck out from its tail and parts of the body. This armour made it more difficult for predators to attack the plant-eater.

12 RARE AUSTRALIAN DINOSAUR

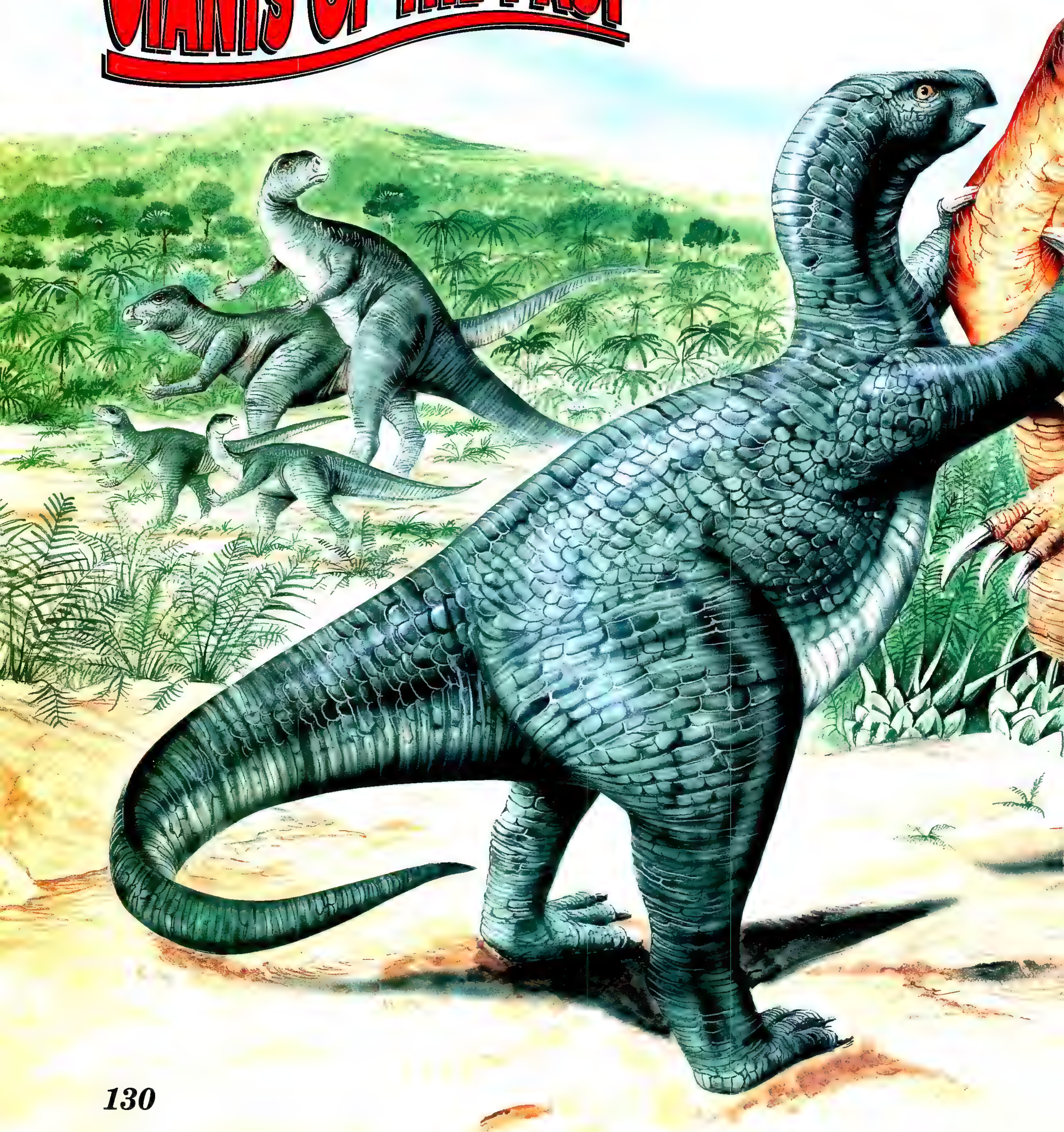
Muttaburrasaurus, a relative of *Iguanodon*, takes a refreshing drink at a waterhole. *Muttaburrasaurus* measured 7m long and had a broad head. It also had a strange, bony bump on its snout. *Muttaburrasaurus* is one of the few dinosaurs dug up in Australia so far.

IT'S A FACT

ENERGY FROM THE SUN

Modern day reptiles, such as iguanas (a kind of lizard), use the sun to help them warm their blood in a way similar to that used by *Ouranosaurus*, millions of years ago. In the morning, after a cold night, iguanas can be seen lying in the sun, absorbing its warmth. Once they are warm, iguanas have far more energy to scurry about in search of food.

GIANTS OF THE PAST



IGUANODON

The terrifying predator *Baryonyx* has attacked *Iguanodon*. But the huge plant-eater defends itself by jabbing its powerful thumb spikes into *Baryonyx's* neck. Some other *Iguanodon* from the herd are making a hasty retreat.

3-D Gallery 11

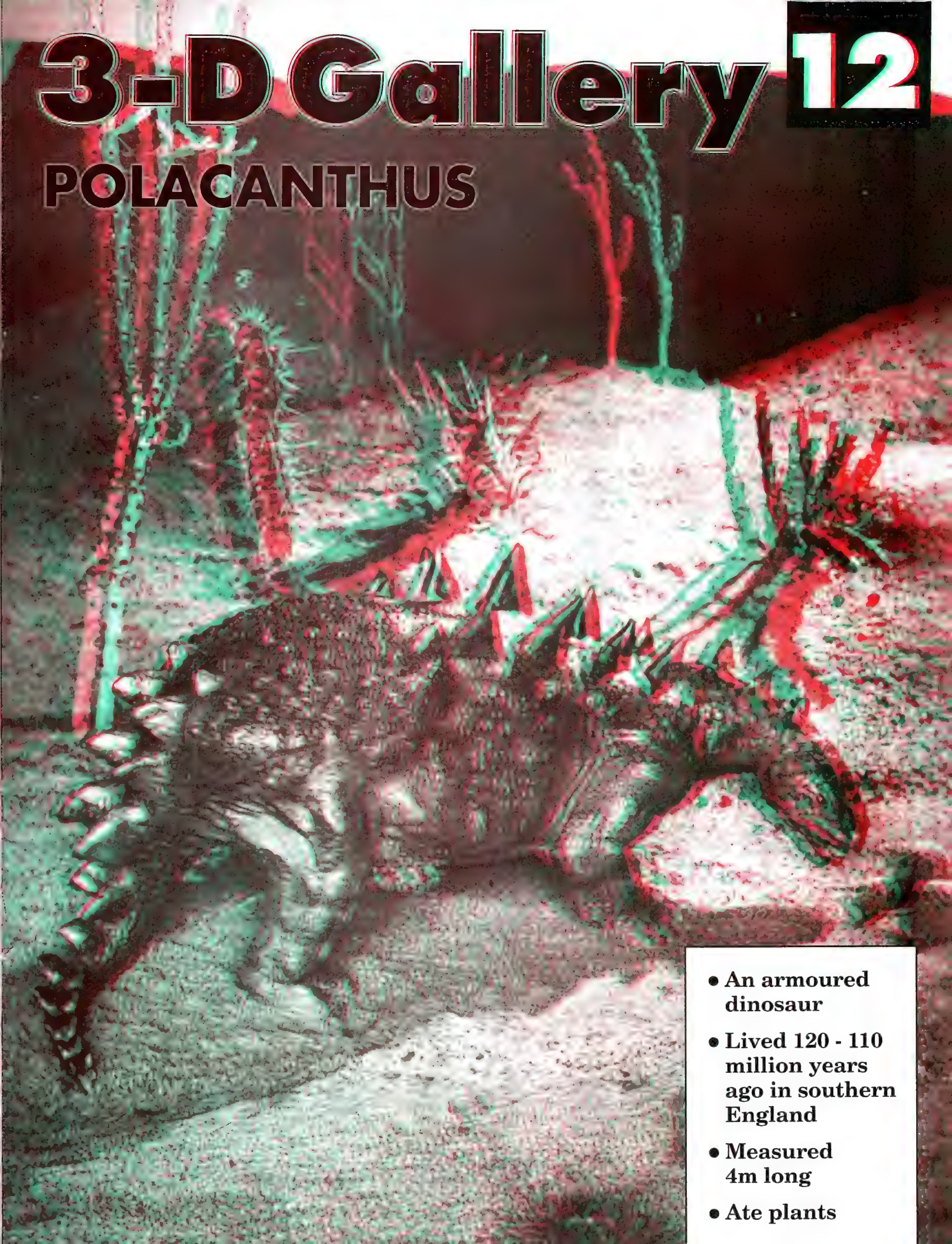
TRICERATOPS

- A horned dinosaur
- Lived 70 - 65 million years ago in North America
- Measured 9m long and 3m high
- Ate plants

3-D Gallery

12

POLACANTHUS



- An armoured dinosaur
- Lived 120 - 110 million years ago in southern England
- Measured 4m long
- Ate plants

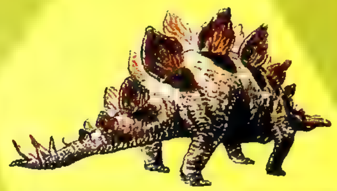
Fantastic tails

Spiked, whip-like, clubbed, muscular or stiff, dinosaurs used their incredible tails as weapons, balancing poles or rudders.

Most plant-eating dinosaurs used their tails to protect themselves against fierce predators. *Diplodocus*, for example, had a very long tail which it used like a whip if it was threatened by an enemy. *Stegosaurus* had a spiked tail which could give a hunting dinosaur a nasty wound, and the clubbed tail of *Euplocephalus* was dangerous to meat-eaters too. Carnivores, however, did not need to use their tails to defend themselves. They used their tails to help them keep their balance as they ran.

SPIKED TAIL

Stegosaurus

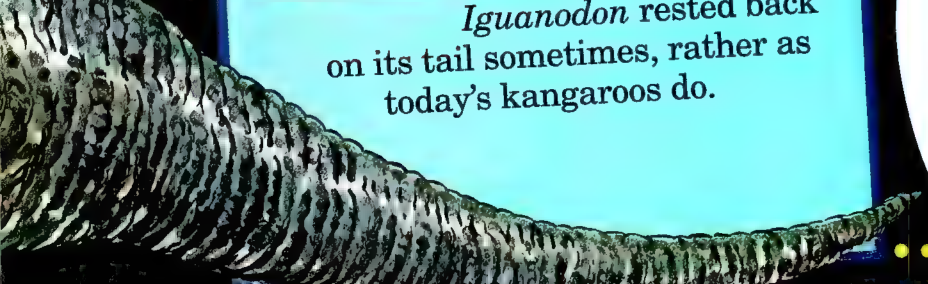


Near the tip of *Stegosaurus'* tail were two pairs of spikes. These were large, made of bone and had very sharp points. They were *Stegosaurus'* weapons; it used them to defend itself against prowling predators. If attacked, *Stegosaurus* swung its tail and the spikes cut deeply into its enemy's flesh.

MUSCULAR TAIL

Iguanodon

Iguanodon had no clubs or spikes on its tail to defend itself. Its weapons were its two deadly thumb spikes. Its 4m-long tail was used to help it keep its balance when it reared up and walked on two legs. Because the tail was strong, some experts think that *Iguanodon* rested back on its tail sometimes, rather as today's kangaroos do.



IT'S A FACT

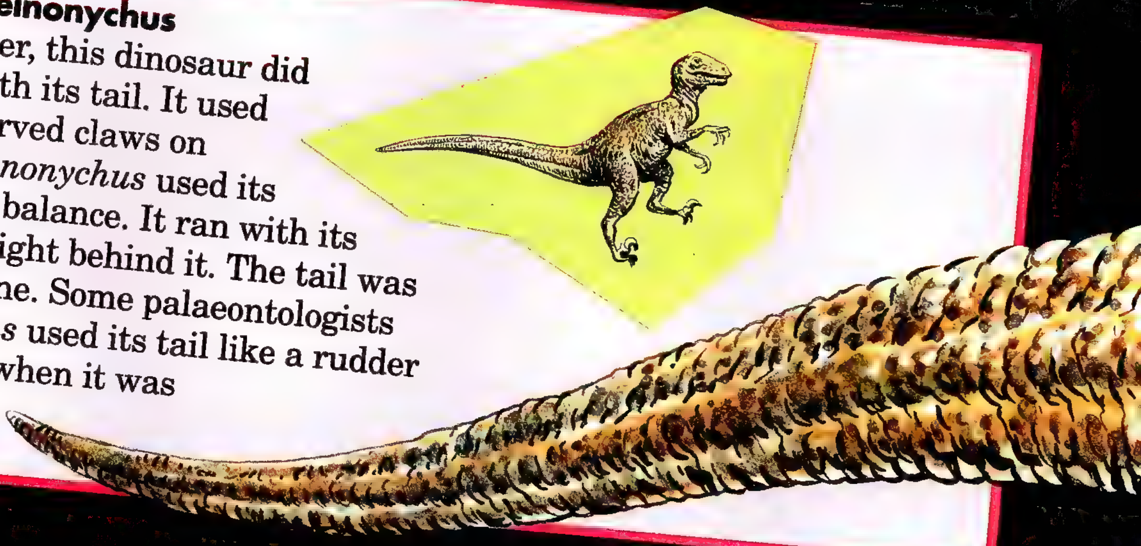
END OF THE TAIL

Although *Tyrannosaurus rex* is one of the most famous dinosaurs, no complete fossils of its tail have ever been found. It is mostly the end bones that are missing, so nobody knows exactly how long the tail was. Many scientists think that the tail was so long that *T rex* dragged it behind itself on the ground when it walked. *T rex* did not need to use its tail as a weapon because it attacked its enemies with its teeth and claws.

STIFFENED TAIL

Deinonychus

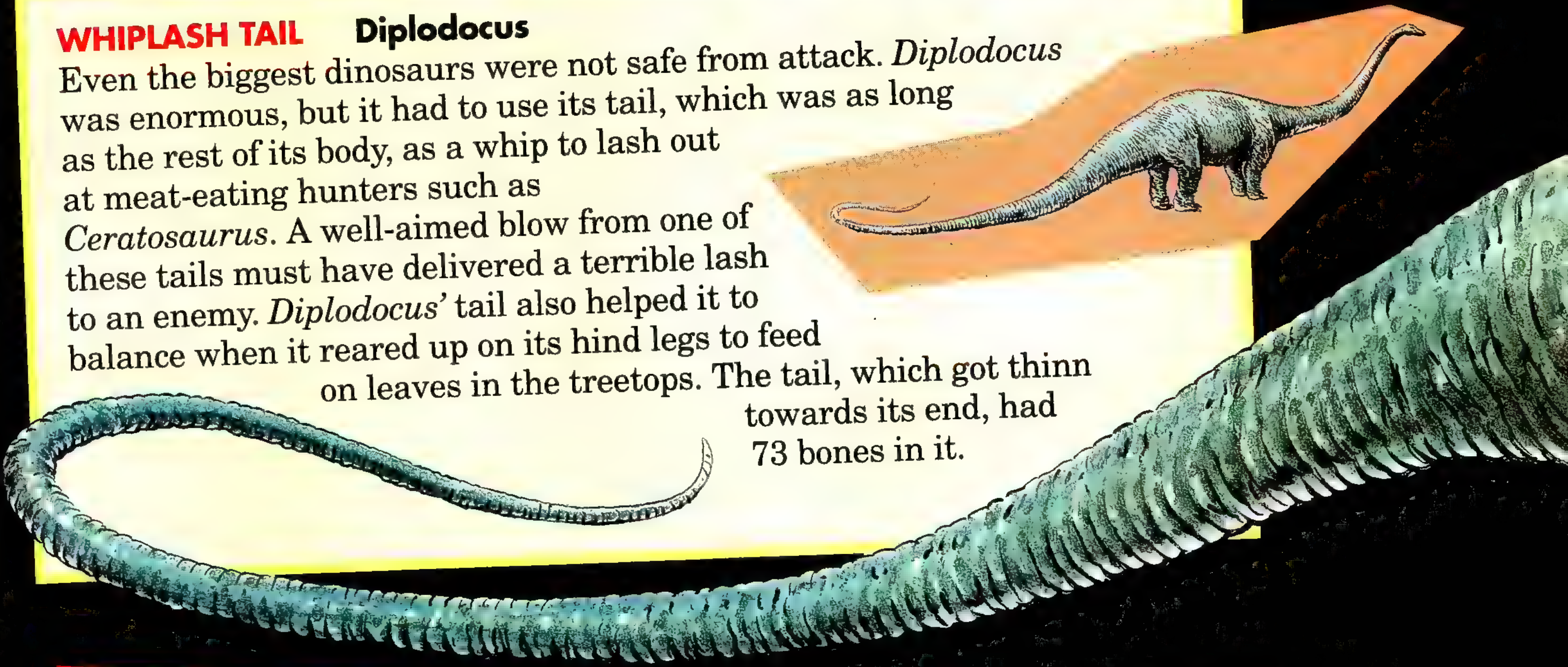
A fearsome meat-eater, this dinosaur did not need to attack with its tail. It used the large, terrible, curved claws on its feet to do that. *Deinonychus* used its tail to help it keep its balance. It ran with its tail held stiff and straight behind it. The tail was stiffened by rods of bone. Some palaeontologists think that *Deinonychus* used its tail like a rudder to steer round objects when it was running flat out.



WHIPLASH TAIL

Diplodocus

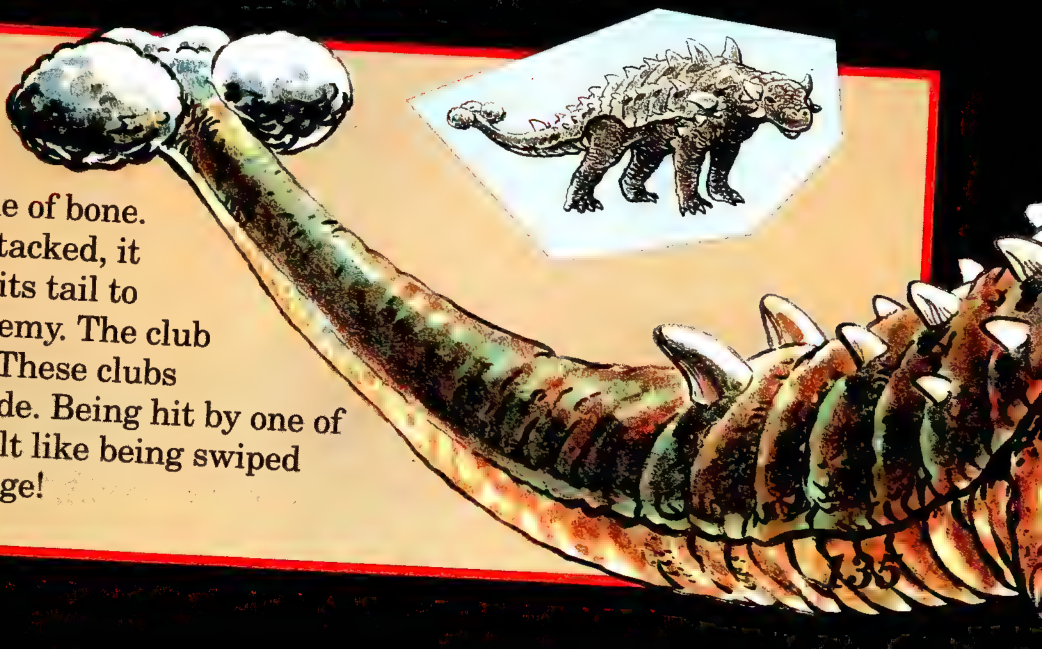
Even the biggest dinosaurs were not safe from attack. *Diplodocus* was enormous, but it had to use its tail, which was as long as the rest of its body, as a whip to lash out at meat-eating hunters such as *Ceratosaurus*. A well-aimed blow from one of these tails must have delivered a terrible lash to an enemy. *Diplodocus'* tail also helped it to balance when it reared up on its hind legs to feed on leaves in the treetops. The tail, which got thinn towards its end, had 73 bones in it.



CLUBBED TAIL

Euoplocephalus

The huge club at the end of *Euoplocephalus'* tail was made of bone. When *Euoplocephalus* was attacked, it used the powerful muscles in its tail to swing the heavy club at its enemy. The club could smash a dinosaur's leg. These clubs sometimes grew to a metre wide. Being hit by one of these large clubs must have felt like being swiped sideways by a fast-moving fridge!



Walking with the reptile feet

The sauropods are one of the easiest dinosaur groups to identify. They were the largest dinosaurs to roam the land. They had huge bodies, four sturdy legs with clawed feet, long necks and tails, and small heads.

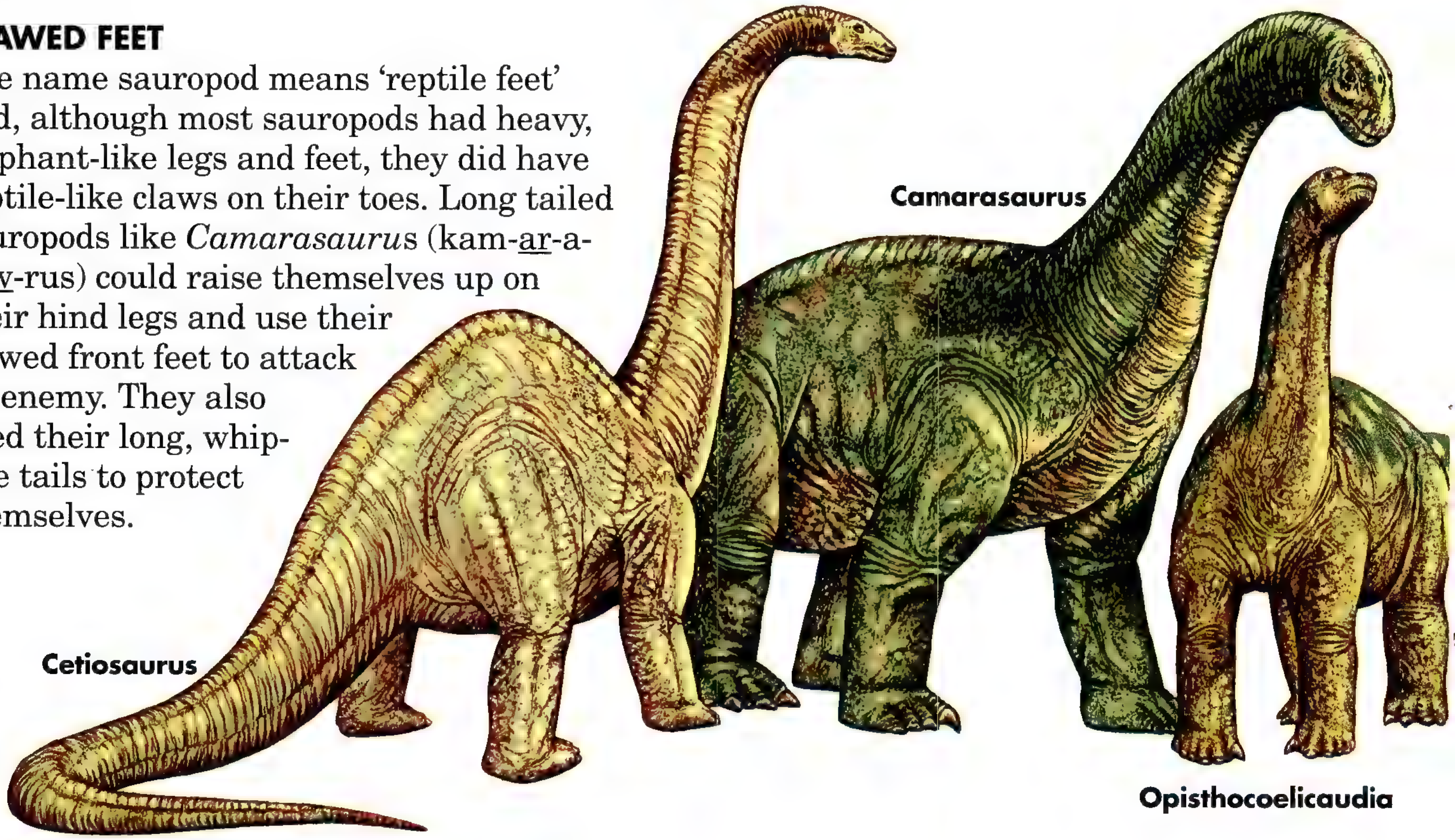
The biggest ever dinosaurs belong to the sauropod group. *Brachiosaurus* is a good example of what a sauropod looked like. It was a huge animal, measuring up to 23 metres long and 12 metres high. It used all four legs for support and its front feet had reptile-like claws. Its long neck was topped with a tiny head.

LONG NECKS

One of the most common features of the sauropods was their long, slim necks. They browsed (fed) on the leaves from the tops of trees a bit like giraffes do today. They sometimes stood on their hind legs to make themselves even taller. *Mamenchisaurus* (ma-mench-ih-saw-rus) had the longest neck of all the sauropods.

CLAWED FEET

The name sauropod means 'reptile feet' and, although most sauropods had heavy, elephant-like legs and feet, they did have reptile-like claws on their toes. Long tailed sauropods like *Camarasaurus* (kam-ar-a-saw-rus) could raise themselves up on their hind legs and use their clawed front feet to attack an enemy. They also used their long, whip-like tails to protect themselves.



WATER OR LAND?

Scientists used to believe that sauropods lived in shallow swamps where water would support their great bulk. However, there are now many clues that point to them living on land. Their fossils are mostly found on land, their skeletons were light but very strong and their feet were the right shape for walking on land. If they had tried to walk on the bottom of lakes they would have sunk into the mud.

SPOON-SHAPED TEETH

All sauropods had weak, spoon-shaped teeth. At first, scientists believed that they could only eat soft weeds from lakes and swamps, but they now know sauropods like *Diplodocus* (dip-lod-oh-kus) probably used their teeth to rake leaves from tree tops.

IT'S A FACT

SWIMMING SAUROPODS?

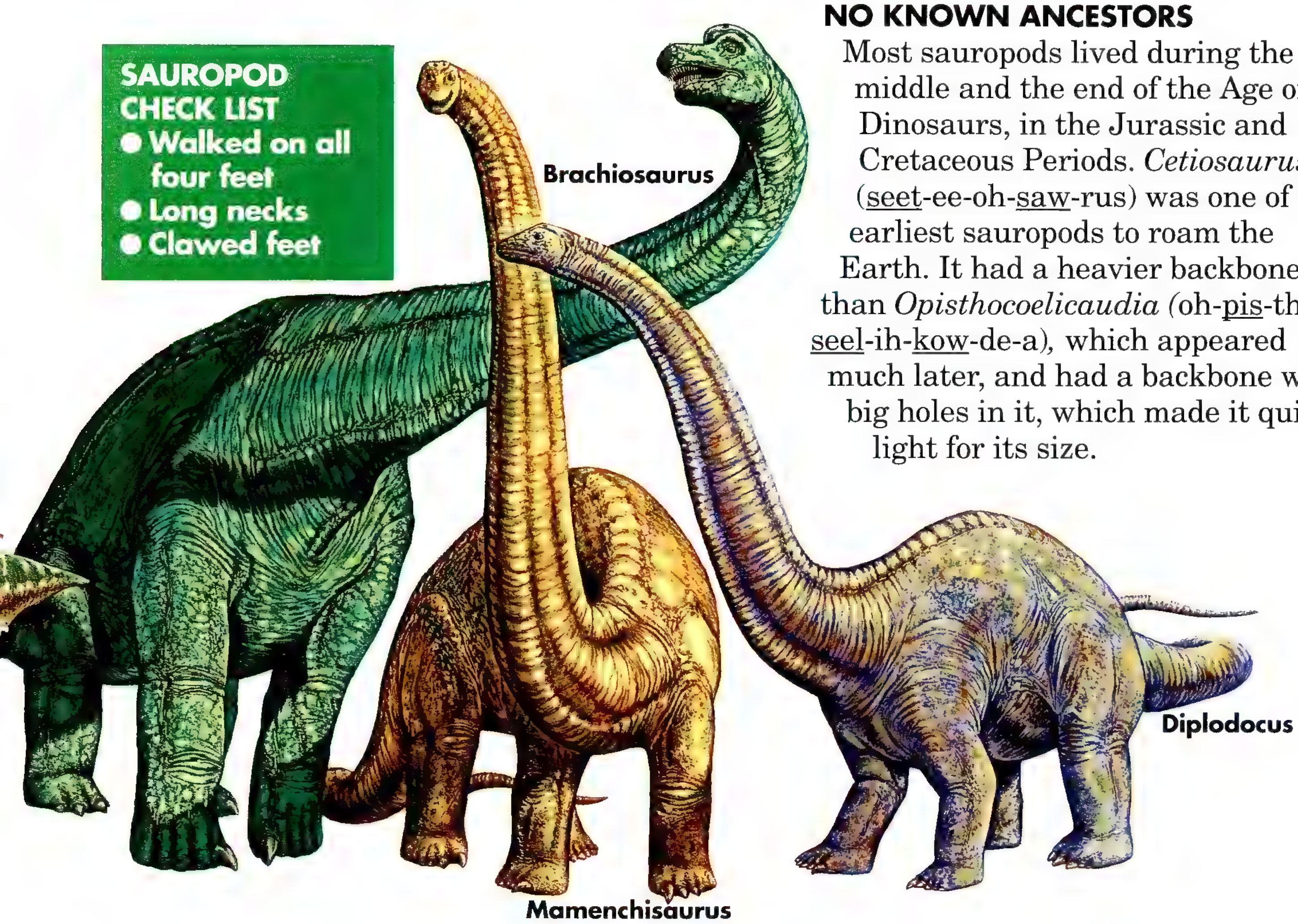
In Texas, USA, in the late 1930s, footprints were uncovered that showed sauropods walking only on their front legs! Because of their size and shape it would have been impossible for sauropods to balance this way on land. Scientists believe that sauropods sometimes 'swam' in shallow water. They used their front legs to pull themselves along and their floating hind legs to steer and so left footprints with their front feet only.

NO KNOWN ANCESTORS

Most sauropods lived during the middle and the end of the Age of Dinosaurs, in the Jurassic and Cretaceous Periods. *Cetiosaurus* (seet-ee-oh-saw-rus) was one of the earliest sauropods to roam the Earth. It had a heavier backbone than *Opisthocoelicaudia* (oh-pis-thoe-seel-ih-kow-de-a), which appeared much later, and had a backbone with big holes in it, which made it quite light for its size.

SAUROPOD CHECK LIST

- Walked on all four feet
- Long necks
- Clawed feet



The ferocious beast feet

All the meat-eating dinosaurs, from the huge, fierce *Tyrannosaurus rex* to the tiny, fast-running *Compsognathus*, belonged to one group – the theropods.

Tyrannosaurus rex was one of the largest and fiercest dinosaurs ever to live. It could rip the flesh off its prey with one bite. *Compsognathus* was a tiny, chicken-like dinosaur, which could run very fast and fed on insects and lizards.

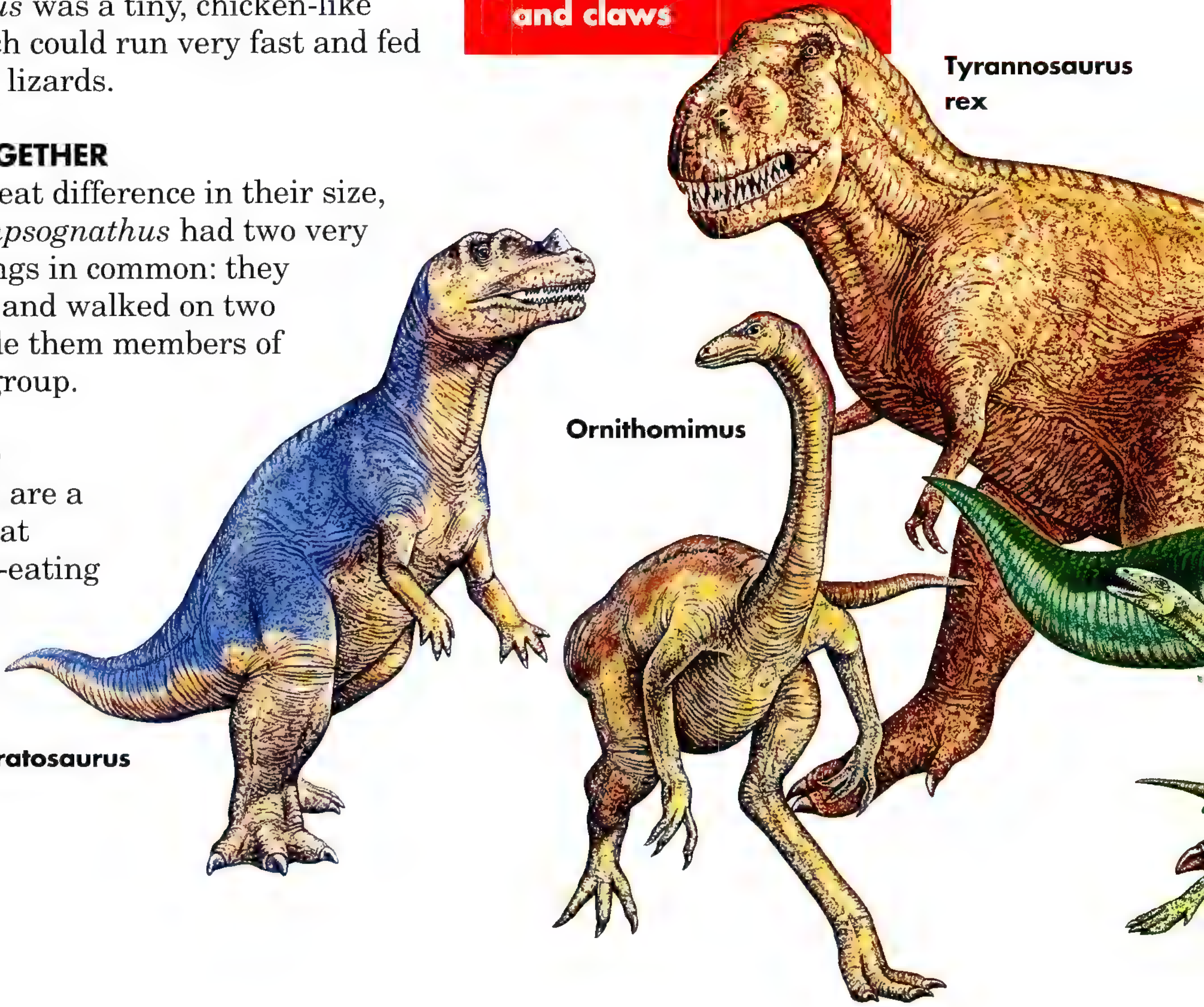
GROUPED TOGETHER

Despite the great difference in their size, *T rex* and *Compsognathus* had two very important things in common: they both ate meat and walked on two legs. This made them members of the theropod group.

A MIXED BAG

The theropods are a large group that contains meat-eating dinosaurs of all sizes.

THEROPOD CHECK LIST
- Ate meat
- Walked on two legs
- Sharp teeth and claws



BEAST FOOT

All theropods had two long, strong back legs for walking and long, muscular tails to balance themselves. The name theropod means 'beast foot'. Most of the dinosaurs in the group had three forward-pointing toes with very sharp claws and a fourth clawed toe which pointed backwards. They had short arms with sharp claws. Their long jaws were lined with dagger-like teeth to tear up their prey. Theropods lived throughout the Age of the Dinosaurs.

FROM FIRST TO LAST

Early theropods, such as *Coelophysis*, were mostly small and light. They could run very quickly on their long, strong back legs and could chase lizards and other insects. *Ornithomimus* (or-nith-oh-mime-us) is different from the other theropods because it didn't have teeth. It had a horny beak and ate nuts and berries as well as lizards.

IT'S A FACT

TERRIBLE CLAW

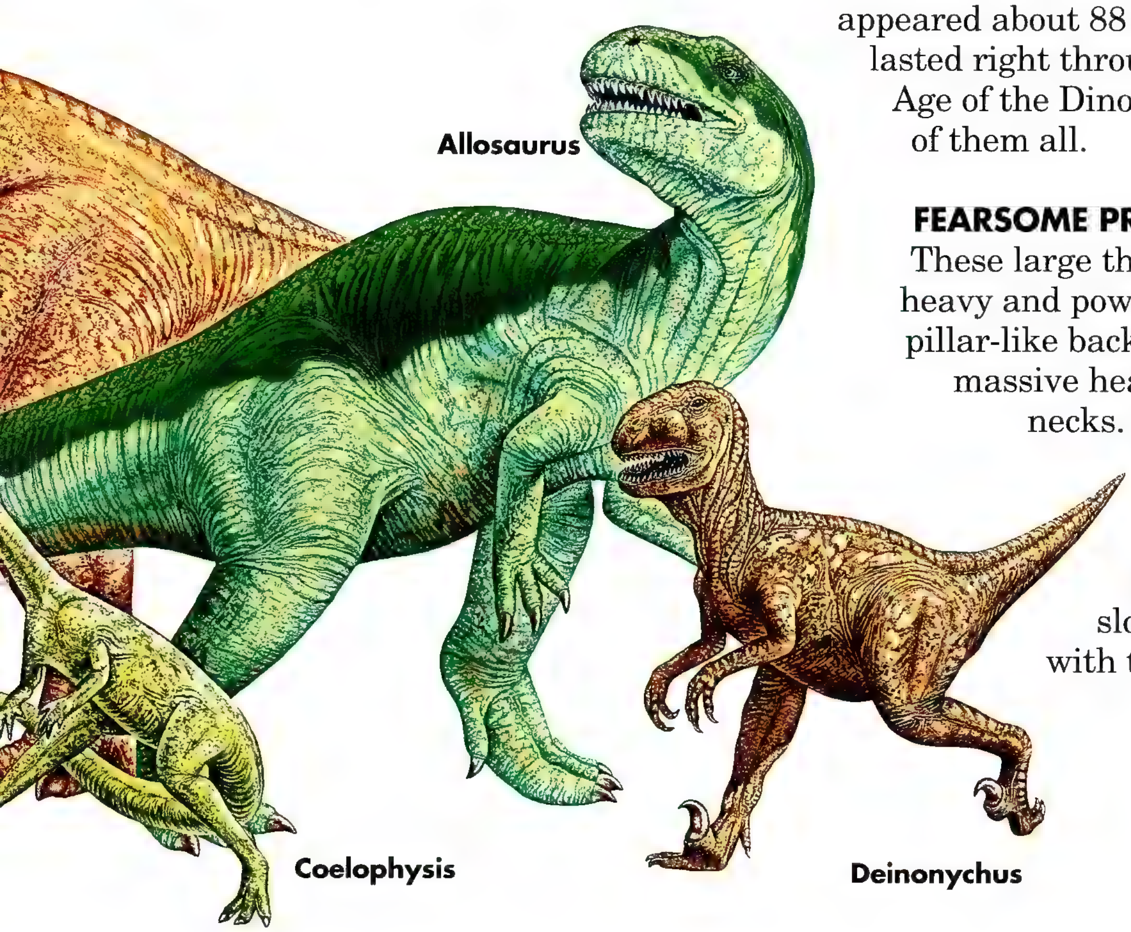
When *Deinonychus* was found in 1964, it was put into the theropod group because it ran on its two back legs and ate meat. However, it is quite different from most of the others. It was small, but it had a very large head and unusually long arms. Its feet were also very different because they had only two forward-facing toes. Its second toe was a huge, upright, curved claw, with which it kicked its prey.

THE LARGEST OF THEM ALL

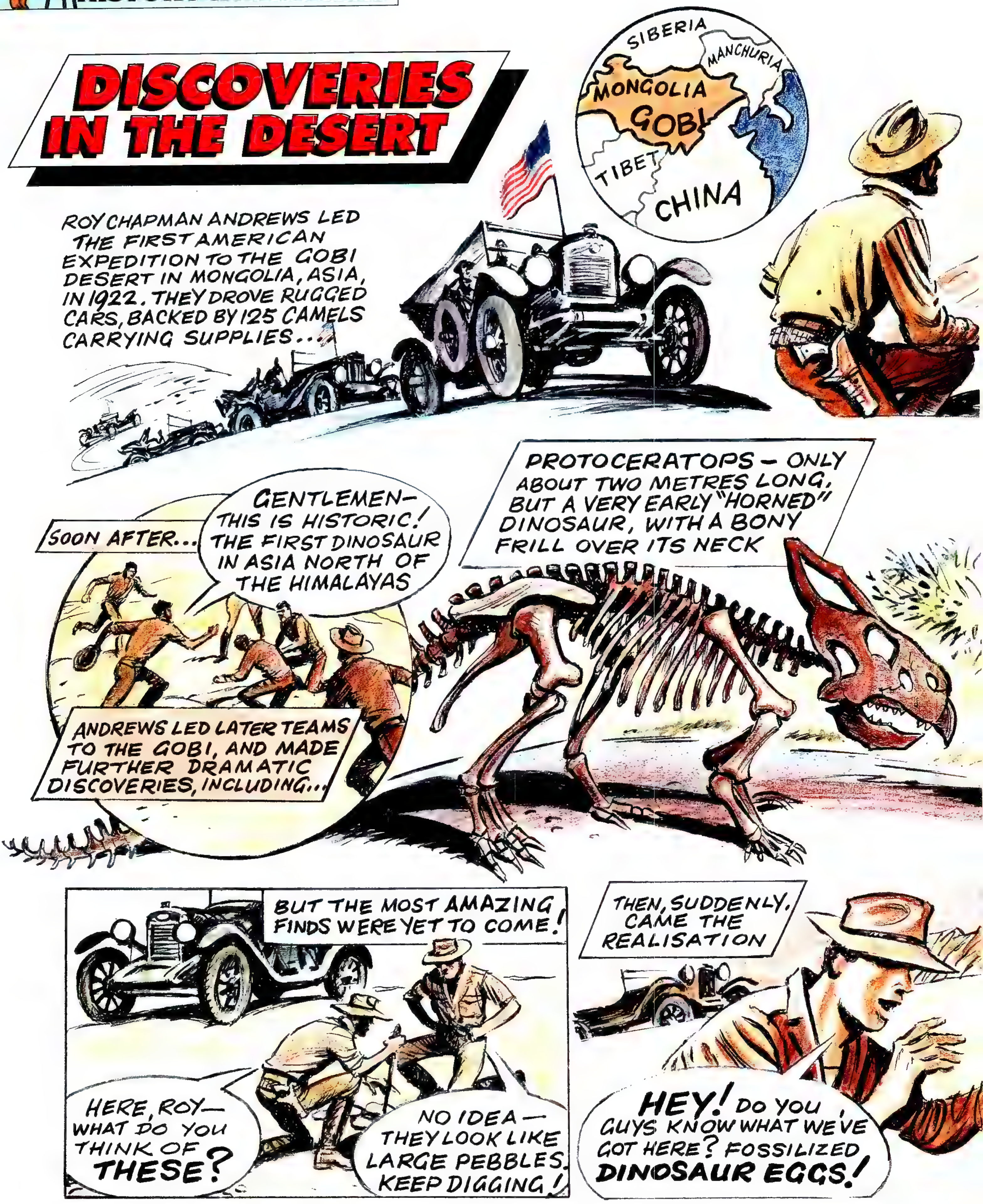
The first theropods were much smaller in size than the later ones. *T rex*, which appeared about 88 million years ago and lasted right through to the end of the Age of the Dinosaurs, was the largest of them all.

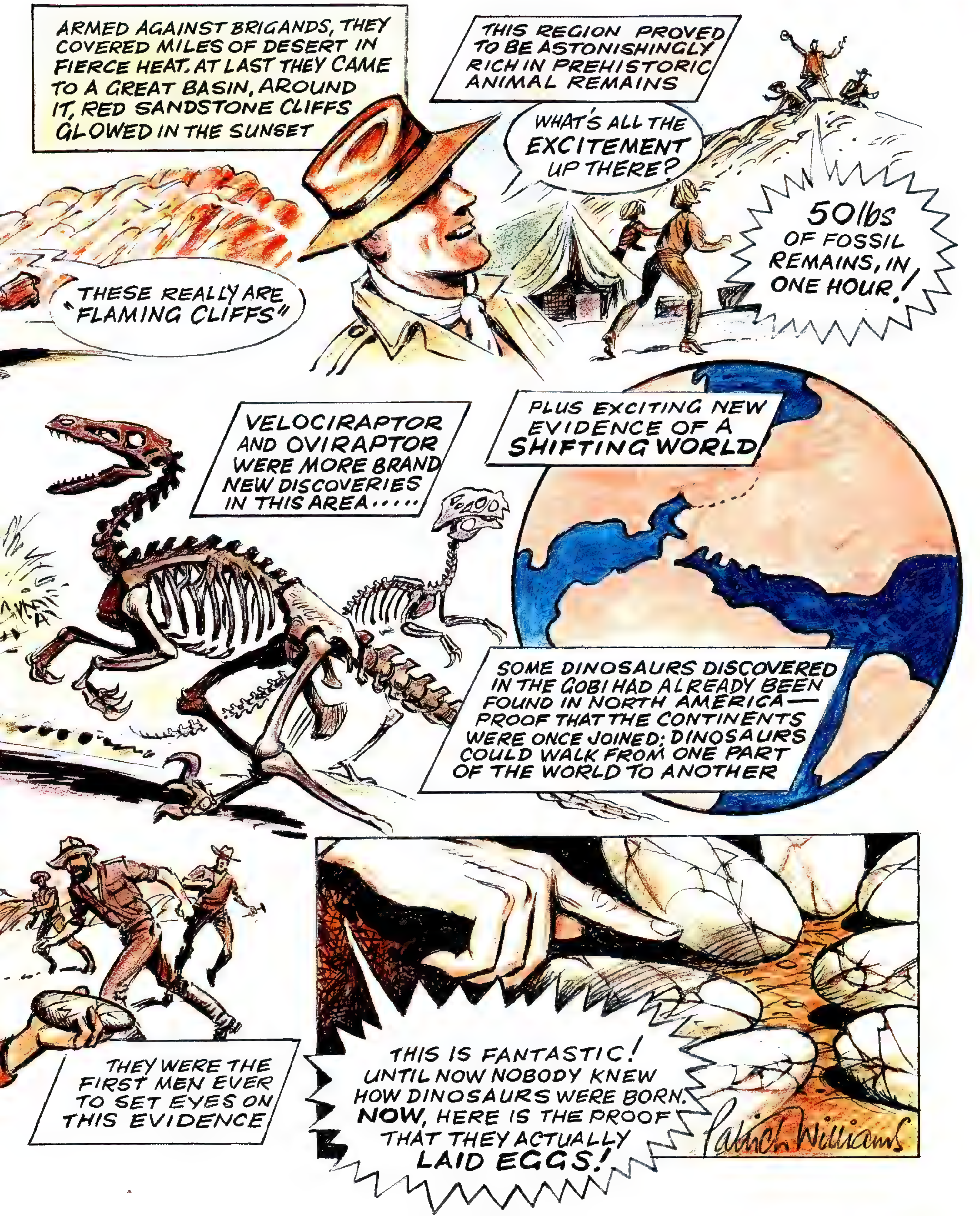
FEARSOME PREDATORS

These large theropods were very heavy and powerful. They had strong, pillar-like back legs, small arms and massive heads on short, powerful necks. They couldn't run very fast for long because they were so heavy. But they were fierce hunters and could kill slow moving dinosaurs with their claws and teeth.



DISCOVERIES IN THE DESERT


SIBERIA
MANCHURIA
MONGOLIA
GOBI
TIBET
CHINA
ROY CHAPMAN ANDREWS LED THE FIRST AMERICAN EXPEDITION TO THE GOBI DESERT IN MONGOLIA, ASIA, IN 1922. THEY DROVE RUGGED CARS, BACKED BY 125 CAMELS CARRYING SUPPLIES...
SOON AFTER...
GENTLEMEN- THIS IS HISTORIC! THE FIRST DINOSAUR IN ASIA NORTH OF THE HIMALAYAS
PROTOCERATOPS – ONLY ABOUT TWO METRES LONG, BUT A VERY EARLY "HORNED" DINOSAUR, WITH A BONY FRILL OVER ITS NECK
ANDREWS LED LATER TEAMS TO THE GOBI, AND MADE FURTHER DRAMATIC DISCOVERIES, INCLUDING...
BUT THE MOST AMAZING FINDS WERE YET TO COME!
HERE, ROY– WHAT DO YOU THINK OF THESE?
NO IDEA– THEY LOOK LIKE LARGE PEBBLES. KEEP DIGGING!
THEN, SUDDENLY, CAME THE REALISATION
HEY! DO YOU GUYS KNOW WHAT WE'VE GOT HERE? FOSSILIZED DINOSAUR EGGS!


ARMED AGAINST BRIGANDS, THEY COVERED MILES OF DESERT IN FIERCE HEAT. AT LAST THEY CAME TO A GREAT BASIN, AROUND IT, RED SANDSTONE CLIFFS GLOWED IN THE SUNSET
THIS REGION PROVED TO BE ASTONISHINGLY RICH IN PREHISTORIC ANIMAL REMAINS
WHAT'S ALL THE EXCITEMENT UP THERE?
THESE REALLY ARE "FLAMING CLIFFS"
50lbs OF FOSSIL REMAINS, IN ONE HOUR!
VELOCIRAPTOR AND OVIRAPTOR WERE MORE BRAND NEW DISCOVERIES IN THIS AREA.....
PLUS EXCITING NEW EVIDENCE OF A SHIFTING WORLD
SOME DINOSAURS DISCOVERED IN THE GOBI HAD ALREADY BEEN FOUND IN NORTH AMERICA— PROOF THAT THE CONTINENTS WERE ONCE JOINED: DINOSAURS COULD WALK FROM ONE PART OF THE WORLD TO ANOTHER
THEY WERE THE FIRST MEN EVER TO SET EYES ON THIS EVIDENCE
THIS IS FANTASTIC! UNTIL NOW NOBODY KNEW HOW DINOSAURS WERE BORN. NOW, HERE IS THE PROOF THAT THEY ACTUALLY LAID EGGS!
Patrick Williams

Improve and test your knowledge with...

DINO Fact File

Follow the footprints to complete the quiz and get to the bottom of the question!

1 Where were 39 *Iguanodon* skeletons found in Belgium?

a) in a garden
b) on the beach
c) down a coal mine

2 What did *Iguanodon* use its thumb spike for?

a) to spike an enemy
b) to scratch its feet
c) to dig for food

Club-tailed sauropod

An unusual sauropod has recently been found in China. Unlike other sauropods, Omeisaurus had a heavy, bony club on the end of its tail, which it used to defend itself.

Continually growing

Dinosaurs did not stop growing when they became adult. They grew slowly until they died.

6 Where was *Muttaburrasaurus* discovered?

a) Australia
b) Africa
c) Asia

7 How many bones were in *Diplodocus'* tail?

a) 27
b) 49
c) 73

8 What did *Stegosaurus* have at the end of its tail?

a) two pairs of spikes
b) bony clubs
c) horny plates

Hollow bones

Many dinosaurs had hollow limb bones. This made them lighter so that they could move about more easily. Scientists think that the hollow bones in today's birds have been inherited from their dinosaur ancestors.

9 What made *Ornithomimus* different from other theropods?

a) it didn't eat meat
b) it walked on four legs
c) it didn't have teeth

10 What were sauropods' teeth like?

a) sharp and pointed
b) weak and spoon-shaped
c) strong and flat

Mistaken identity

Cetiosaurus was given its name, which means 'whale lizard', because experts thought it was a large, whale-like reptile. We now know that it was a harmless sauropod.

3 Why did *Barosaurus* live in herds?

a) for company
b) for defence against enemies
c) to find food

4 What does *Gallimimus* mean?

a) hen mimic
b) bird dinosaur
c) running ostrich

5 In which period did the plant-eaters reign?

a) in the Jurassic
b) in the Early Cretaceous
c) in the Triassic

Heaviest bone

The heaviest bone in the world weighs about 450kg, is 2m long and is the thigh bone of a sauropod. It is on display in the Field Museum, Chicago, USA. It now weighs five or six times more than it did when the dinosaur was alive. This is because during the time the bone was buried, minerals seeped into it and made it far heavier.

View of the moon

The moon is steadily moving further away from Earth. In the Age of the Dinosaurs, it would have looked much larger. Many of the craters that are there today had not formed at that time.

Hesperornis

Early birds

The first birds appeared during the Jurassic Period. They had teeth; today's birds do not. Hesperornis, a fish eating bird, lived at the same time as T rex and Triceratops. It used its teeth to grip its slippery prey.

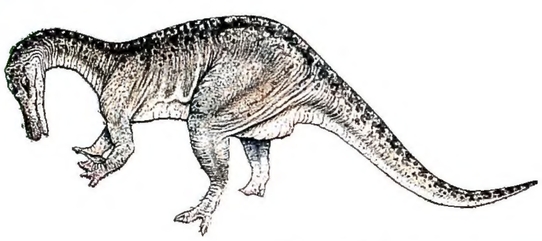
Answers to the questions on inside back cover

A to Z OF DINOSAURS

BARSBOLDIA 70 MYA

Barsboldia (bars-bold-ia) was a large duckbilled dinosaur, similar to *Corythosaurus*. It was named after its discoverer, Professor Rinchen Barsbold. He found it in 1982 in Mongolia.

BARYONYX 130 MYA



One of the most exciting dinosaur finds of recent years, *Baryonyx* (bar-ee-on-ix) was discovered in 1983 by an amateur fossil hunter in England. It was about 9m long and was named 'heavy claw' after its enormous, sharp 30cm-long claw.

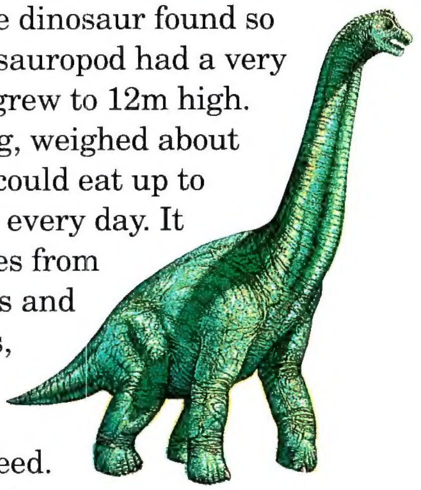
BLIKANASAURUS 220 MYA

Blikana Mountain in Cape Province, South Africa, gave its name to this dinosaur which was discovered there. *Blikanasaurus* (blik-arn-a-saw-rus) was about 3m long and lived in the Triassic Period.

BOTHRIOSPONDYLUS 180 MYA

The name of this dinosaur means 'excavated vertebrae' because very few of its bones – mostly the vertebrae (backbones) – have been found. *Bothriospondylus* (both-ree-oh-spond-ih-lus) was a sauropod whose fossils have been found in Africa and Europe. It may have been 20m long. *Bothriospondylus* was a smaller relative of *Brachiosaurus*.

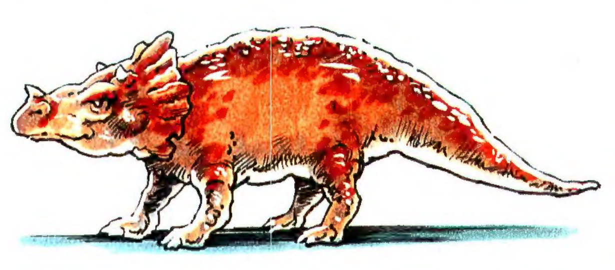
BRACHIOSAURUS 150 MYA



Brachiosaurus (brack-ee-oh-saw-rus) is the tallest complete dinosaur found so far. This giant sauropod had a very long neck and grew to 12m high. It was 23m long, weighed about 20 tonnes and could eat up to 1,500kg of food every day. It fed on the leaves from the tops of trees and moved in herds, constantly in search of new places to feed. Its name, meaning 'arm lizard', comes from its front legs, which were longer than its back legs. *Brachiosaurus* fossils have been dug up in Tanzania and Algeria in Africa, and also in North America.

BRACHYCERATOPS 80 MYA

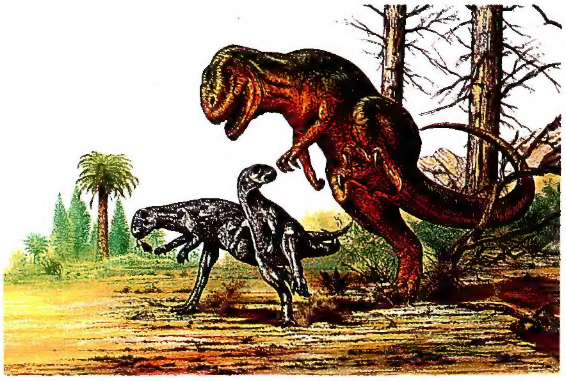
Brachyceratops (brack-ee-serra-tops) was a small ceratopian (horned dinosaur), about 1.8m long. Its name means 'short-horned face'. However, some scientists think that the bones that have been named *Brachyceratops* could have belonged to another dinosaur, *Monoconius*, as they are so similar. *Brachyceratops* was found in North America.



COMING IN PART 7 OF

DINOSAURS!

With a huge mouth and sharp, dagger-like teeth, *Allosaurus* was a ruthless hunter. IDENTIKIT investigates this huge meat-eater, plus *Coelurus* and *Mamenchisaurus*.

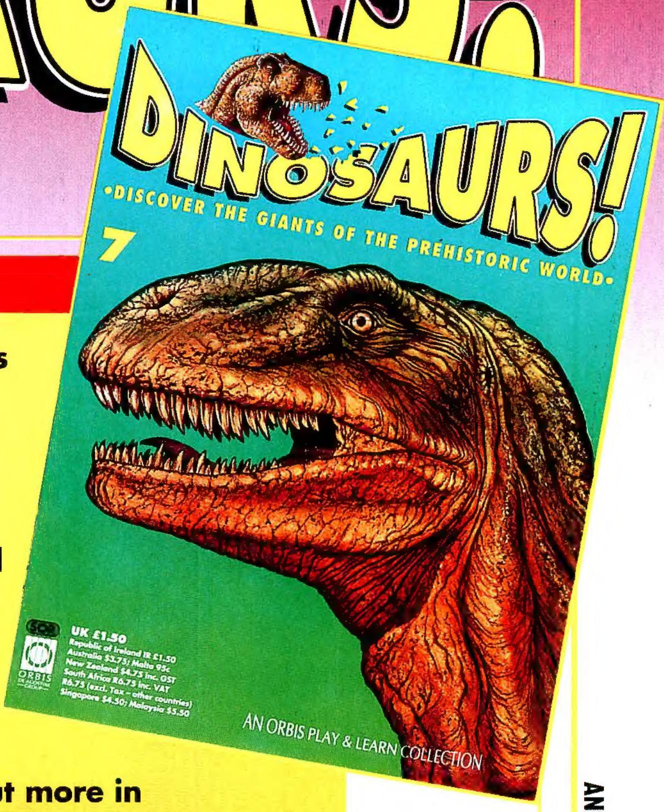


PLUS

More tail bones for your fabulous *T rex* skeleton.

AND

Dinosaurs used their claws for grabbing their prey, slashing at enemies and even for fishing. Find out more in SPOTTER'S GUIDE.



DINOSAURS!

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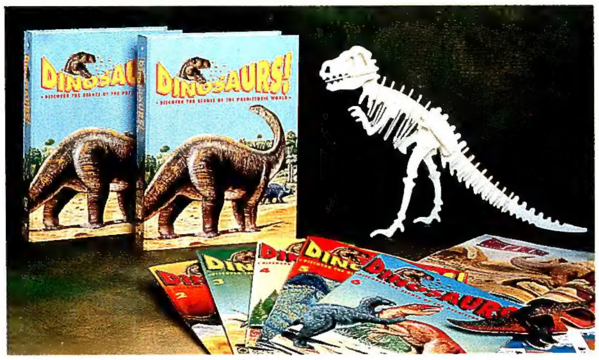

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ANSWERS TO DINO FACT FILE QUESTIONS: 1. c, 2. a, 3. b, 4. a, 5. b, 6. a, 7. c, 8. a, 9. c 10. b

Dr. David Norman of Cambridge University answers your dinosaur questions

ASK THE EXPERT

Did dinosaurs use camouflage?

Just like today's animals, it is very likely that some dinosaurs hid from predators by blending into the surroundings. Those that lived in forests may have had green skin with blotchy patterning so that they could not easily be seen among all the leaves.

Did dinosaurs have good eyesight?

As far as we can tell, dinosaurs probably had very good eyesight. Most dinosaur skulls have big eye sockets which means that their eyes were large. The part of the brain that helped with vision (seeing) was also well developed.

How do palaeontologists tell dinosaur footprints apart?

Even for experts, it is often very difficult to tell which dinosaur left which footprints, but palaeontologists look first at the shape of the feet and toes. Then they study the age of the rocks in which the footprints were found – they only consider dinosaurs that lived at the time that the rocks were formed.

Did dinosaurs ever get ill?

Dinosaurs probably became ill in much the same way as animals do today. We know that they sometimes broke bones and that these fractures healed up. The mended bones can clearly be seen in fossils. Some fossilized bones also show evidence that dinosaurs had cancer, and arthritis in their joints, as well.

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